

# **Transportation Impact Report**

**19R Park Avenue**

**Arlington, MA**

**November 2016 (Revised December 2016)**

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**Prepared for:**

**Housing Corporation of Arlington  
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## Executive Summary

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BSC Group has evaluated traffic impacts associated with the proposed residential development to be located at 19R Park Avenue in Arlington, Massachusetts. This report has been revised based on comments from the Town of Arlington Transportation Advisory Committee. The Housing Corporation of Arlington proposes to construct 38 residential apartments, including 23 parking spaces. Access to the site will be via an existing curb cut on Lowell Street.

This study includes a review of existing traffic and roadway conditions, as well as a review of the recent history of crashes at study area intersections. This report identifies background traffic growth for study area roadways, estimates additional traffic generated by the proposed development, and evaluates traffic impacts due to project-generated traffic. The impacts of additional traffic associated with this expansion are evaluated under a five-year planning horizon (Year 2021). The findings of the study are summarized below.

- The minimum required Stopping Sight Distance (SSD) is available for vehicles traveling both eastbound and westbound on Lowell Street based on the posted speed limit of 30 MPH.
- The calculated crash rate at the intersection of Downing Square is below both the statewide and District 4 averages.
- The Client has submitted a Transportation Demand Management (TDM) Plan including items such as: providing one or more spaces for Zipcar parking and use; monetary credits for Zipcar membership and transit pass fees; space for indoor and outdoor bicycle parking; as well as charging tenants for the use of parking spaces on-site.
- The proposed project is expected to generate 16 vehicle trips during the weekday morning peak hour (3 entering, 13 exiting), 27 vehicle trips during the weekday afternoon peak hour (17 entering, 10 exiting), and 248 vehicle trips during a typical weekday.
- When compared to the former preschool use at 127 Lowell Street, the proposed 38-unit residential development is expected to generate approximately 36 fewer vehicle trips (25 fewer entering, 11 fewer exiting) during the weekday morning peak hour, 26 fewer vehicle trips (8 fewer entering, 18 fewer exiting) during the weekday afternoon peak hour, and 30 fewer vehicle trips during an average weekday.
- When compared to the No-Build condition, the Levels of Service (LOS) for critical movements at Downing Square are not significantly impacted by incremental project-generated traffic.

It is the opinion of BSC Group that the existing roadway network will be able to accommodate the new vehicle trips associated with the proposed residential development located at 19R Park Avenue in Arlington, Massachusetts.



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## Chapter 1: Existing Conditions

BSC Group, Inc. (BSC) has prepared this Traffic Impact Study to evaluate the potential impacts on the local transportation network associated with the proposed housing development to be located at 19R Park Avenue in Arlington, Massachusetts. This report has been revised based on comments from the Town of Arlington Transportation Advisory Committee.

This study includes a review of existing transportation and roadway conditions in the vicinity of the Project, as well as an analysis of traffic operations at study area intersections. This study identifies background traffic growth for study area roadways, including traffic associated with any other proposed projects in the vicinity of the Project site. This study estimates additional traffic generated by the proposed development and evaluates impacts on the transportation network due to project-generated trips.

### 1.1 Project Description

The Housing Corporation of Arlington (HCA) proposes to construct residential apartments located at 19R Park Avenue in Arlington, Massachusetts. The development will include 38 residential apartments consisting of one-, two-, and three-bedroom rental units in two buildings, including 23 parking spaces (3 of which are accessible parking spaces). Access to the site will be via an existing curb cut on Lowell Street.

The Client has indicated that based on surveys of the tenants on the waitlist, 70 percent (65 of 93) of those responding indicated they will not have a car. It is the assumption of the client that many of the tenants will use other non-vehicular modes of transportation. However, for the purposes of analysis, trips for the Project have been estimated using the full number of units. The locus map of the project site is displayed in Figure 1.

In addition to this 38-unit residential development, HCA is planning the rehabilitation of the former Highrock Covenant Preschool, located at 127 Lowell Street. The preschool closed in June 2016, and the Client proposes to rehabilitate the building into 9 residential units with no off-street parking spaces. While the 9-unit residential development is not considered part of this Project, trip generation calculations have been performed for the purposes of comparison and are discussed further in Section 2.2.2.

### 1.2 Study Area and Existing Roadway Conditions

The study area for the traffic impact analysis is limited to “Downing Square”, which is the six-legged intersection of Park Avenue, Park Avenue Extension, Lowell Street, Bow Street, and Westminster Avenue; and the Site Driveway at Lowell Street. In 2009, BSC Group prepared an Improvements Study in order to evaluate the intersection and recommend safety and operational improvements. Based on the results of that study,

geometric changes were designed and implemented at the intersection in 2013 in order to improve safety and operations for all modes of travel through the intersection.

All approaches are under stop-control except for the Park Avenue northbound approach. Each approach also consists of one general-purpose travel lane. Crosswalks and accessible ramps are provided across each approach. Dedicated on-street parking is available on both sides of Park Avenue and on the north side of Lowell Street approximately 100 feet beyond the intersection. Vehicles also park on the north sides of Westminster Avenue and Bow Street, though dedicated shoulders are not marked as such. The New Covenant Elementary School is located on the corner between Westminster Avenue and Park Avenue Extension.

Park Avenue serves as one of the three major north-south links in the Town of Arlington, running from Route 2 through Massachusetts Avenue to Downing Square. Park Avenue Extension, running from Downing Square through Summer Street to Forest Street, provides a cut-through to access Winchester and other points north. Bow Street runs from Forest Street near Summer Street to Downing Square, and provides a convenient connection for drivers to access either Summer Street or Massachusetts Avenue. Lowell Street runs in a northwest-southeast direction beginning from Massachusetts Avenue then through the Square, intersecting with Westminster Avenue in the Town of Lexington, then continuing northwest to Summer Street.

### **1.3 Existing Transit Services**

Within walking distance to the Project are the Lexpress Route 1 bus, as well as the Massachusetts Bay Transportation Authority (MBTA) 62, 76, 77, 78 and 79 bus routes.

The Lexpress Route 1 bus, during peak hours (6:35-7:30 AM & 3:45-6:00 PM), travels along Massachusetts Avenue between Depot Square in Lexington and Arlington Heights. In the vicinity of the Project, this bus route runs eastbound on Lowell Street and turns right on Park Avenue southbound, then turns right to continue westbound on Mass Ave. Bus stops for the Lexpress are located on Lowell Street at its intersection with Lowell Street Place, on Park Avenue south of the Minuteman Commuter Bikeway, and at the intersection of Mass Ave and Park Avenue. During peak hours, the Lexpress operates approximately once per hour.

Bus stops serving each of the listed MBTA bus routes are located on either side of Mass Ave at its intersection with Park Avenue. Each MBTA bus route travels in both directions along Mass Ave. The schedules for each route vary, with some operating as frequently as every 10 minutes during peak hours.

Additional bus route information from both Lexpress and the MBTA are included in the Appendix.

### **1.4 Existing Traffic Conditions**

Existing daily traffic volumes in the vicinity of the site were obtained through the use of an Automatic Traffic Recorder (ATR) placed on Lowell Street, west of Downing Square. The ATR was conducted over a 48-hour period from Wednesday October 19 to Thursday

October 20, 2016. The ATR count is summarized in Table 1.

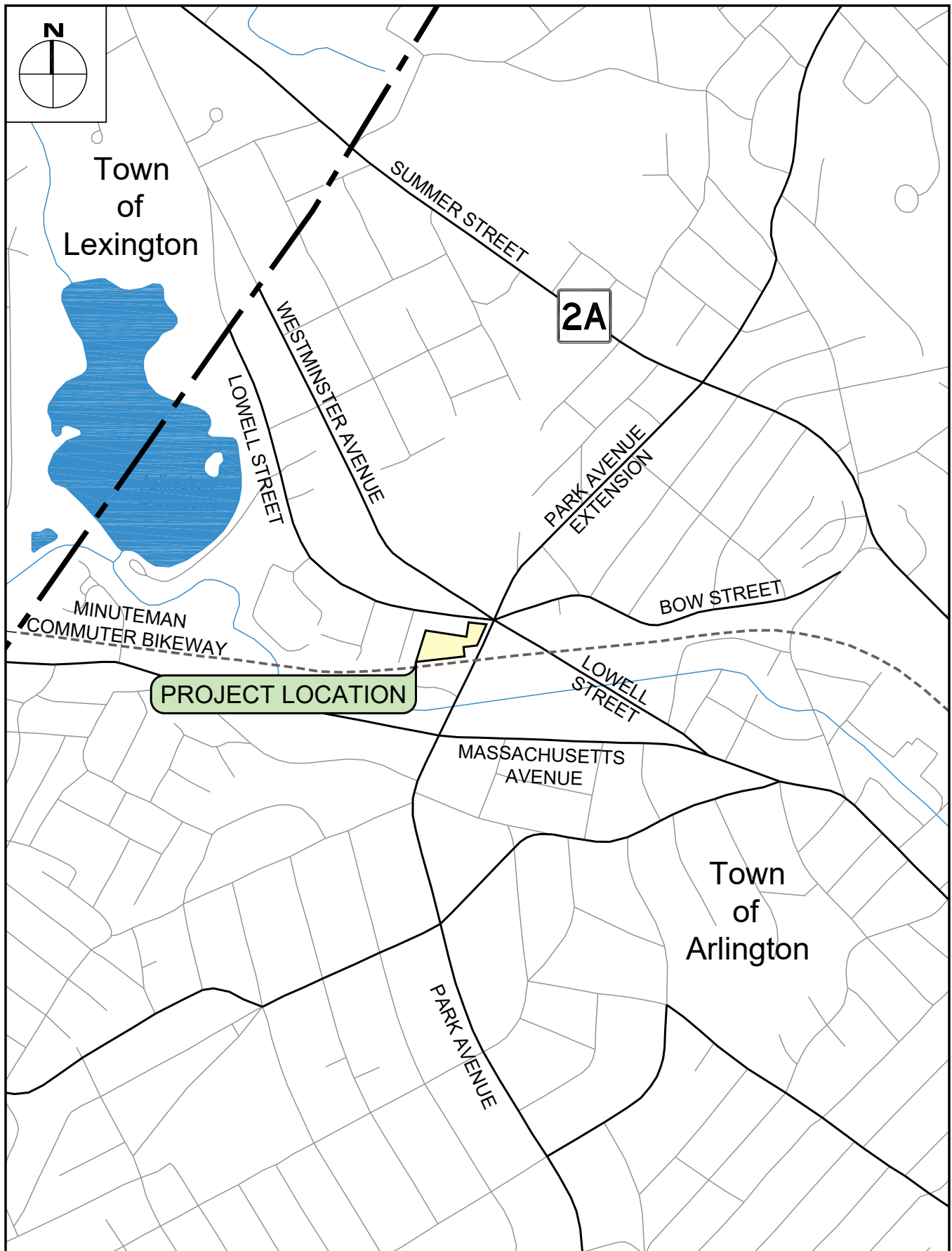
**Table 1: Traffic Volume Summary**

<u>Location</u>	Weekday 24-hour Volume <sup>a</sup>	<u>Morning Peak Hour</u>			<u>Afternoon Peak Hour</u>		
		<u>Traffic Volume<sup>b</sup></u>	<u>K- Factor<sup>c</sup></u>	<u>Dir. Dist.<sup>d</sup></u>	<u>Traffic Volume<sup>b</sup></u>	<u>K- Factor<sup>c</sup></u>	<u>Dir. Dist.<sup>d</sup></u>
Lowell Street, west of Downing Square	6,479	552	8.5%	61% EB	532	8.1%	53% EB
<sup>a</sup> Measured in vehicles per day		<sup>c</sup> Percentage of daily traffic during the peak hour					
<sup>b</sup> Measured in vehicles per hour		<sup>d</sup> Directional Distribution					

In addition to the ATR counts, weekday morning (7:00 – 9:00 AM) and weekday afternoon (4:00 – 6:00 PM) turning movement counts were collected on October 20, 2016 at Downing Square. Existing Conditions (2016) weekday morning and afternoon peak hour traffic volumes for the study area intersections are displayed on Figure 2.

The 48-hour ATR also collected speed data on Lowell Street. The 85<sup>th</sup> percentile speed is defined as the speed at or below which 85 percent of the vehicles are traveling. The 85<sup>th</sup> percentile speed on Lowell Street was recorded as 29 MPH in the eastbound direction and 30 MPH in the westbound direction. The posted speed limit on this section of Lowell Street is 30 MPH.

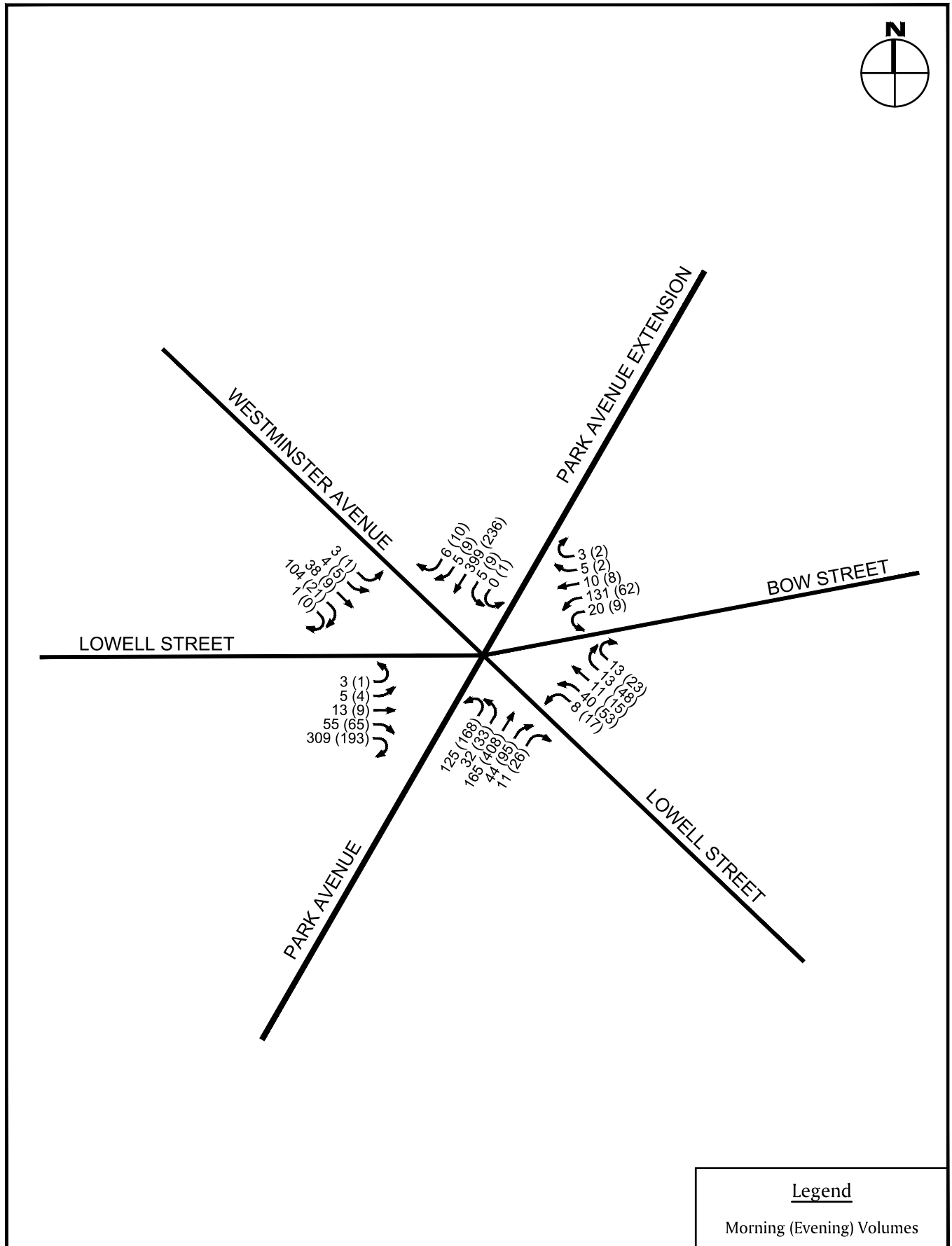
All traffic counts are contained in the Appendix.



Project Location Map  
19R Park Avenue  
Arlington, Massachusetts

Figure 1  
Not to Scale





2016 Existing Condition Weekday Peak Hour Traffic Volumes  
19R Park Avenue  
Arlington, Massachusetts

Figure 2  
Not to Scale

## 1.5 Sight Distance Analysis

Sight distances at the proposed driveway to 19R Park Avenue were evaluated in order to determine whether entering and exiting vehicles would have adequate sight distance. There are two sight distance criteria: Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD). Typically, the requirements for ISD are met when the requirements for SSD are met.

The 85<sup>th</sup> percentile speed recorded on Lowell Street was 29 MPH in the eastbound direction and 30 MPH in the westbound direction. The posted speed limit on Lowell Street is 30 MPH. Table 2 below outlines the minimum required SSD based on the posted speed of 30 MPH.

**Table 2: Sight Distance Analysis**

<u>Location</u>	<u>Available (feet)</u>	<u>Min Required (feet)</u> <u>Posted 30 MPH</u>
<b>STOPPING SIGHT DISTANCE</b>		
Lowell Street, traveling eastbound, towards Site Driveway	615	197
Lowell Street, traveling westbound, towards Site Driveway	>100 <sup>a</sup>	197

<sup>a</sup>SSD is available for the entire distance to the intersection of Downing Square.

The minimum required SSD is available for vehicles traveling both eastbound and westbound on Lowell Street, for the posted speed limit of 30 MPH. Note that the existing curb cut for the proposed residential development is located approximately 100 feet west of the intersection of Downing Square. SSD was available for the entire distance from the intersection to the proposed driveway.

The existing curb cut for the proposed development is gated, and therefore ISD was not able to be measured in the field at this location. BSC recommends that during construction, the Client ensure that existing or proposed vegetation, walls, and other obstructions be less than 3 feet in height in order to provide clear sight lines at this intersection.

## 1.6 Crash Data

Crash data from the Massachusetts Department of Transportation (MassDOT) were reviewed for the most recent available three years on record (2012-2014) at the study area intersection. The crash rate was calculated using crash data and the October 2016 collected traffic volumes. Crash rates represent the number of crashes per million vehicles entering the intersection.

The most recent statewide and district average crash rates issued by MassDOT indicate that the statewide average for unsignalized intersections is 0.58, while the MassDOT District 4 (which includes the Town of Arlington) average is 0.56 for unsignalized intersections. These rates represent 'average' crash experience and serve as a basis for comparing reported crash rates for study area intersections.

As can be seen in Table 3, there were 7 (seven) crashes recorded during the three-year

time period, resulting in a calculated crash rate of 0.34 at this intersection. This calculated crash rate is below both the statewide and District 4 averages for unsignalized intersections. Crash rate worksheets are contained in the Appendix.

It should be noted that during the three years studied in the Improvements Study (2004-2006), there were 20 recorded crashes at the intersection, which resulted in a calculated rate of 0.85 crashes per million entering vehicles in the 2007 Improvements Study. This is compared to the 7 recorded crashes with a calculated crash rate of 0.34, based on recent data. This reduction in crashes may be attributed to the geometric improvements that were implemented in 2013.

Table 3: Summary of Crash Data – Downing Square			
	2012	2013	2014
Crash Severity			
Property Damage		1	
Injury	1	1	1
Unknown	1	1	1
Manner of Collision			
Rear End	1		1
Angle		1	
Single Vehicle Crash		1	
Pedestrian			1
Unknown	1	1	
Time of Day			
6am-10am		1	
10am-4pm	1	1	1
4pm-7pm	1		
7pm-6am		1	1
Roadway Condition			
Dry	1	1	
Wet		1	2
Unknown	1	1	
Season			
Dec-Feb	2	2	2
Mar-May			
Jun-Aug		1	
Sep-Nov			
Light Condition			
Daylight	1	1	1
Darkness		1	1
Unknown	1	1	
Total No. of Crashes	2	3	2
Avg. No. of Crashes per Year	2.33		
Calculated Crash Rate <sup>a</sup>	0.34		
<sup>a</sup> per million entering vehicles, as defined by the Massachusetts Department of Transportation – Highway Division			



## Chapter 2: Future Conditions

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Future traffic conditions within the study area were analyzed to gain an understanding of the impacts of the proposed project on the adjacent transportation network.

Two future scenarios were evaluated to determine future traffic conditions under a five-year planning time horizon. This planning horizon is consistent with published state guidelines for traffic impact assessments. The first scenario, the Future No-Build Condition, examines vehicular traffic conditions five years into the future (in 2021), assuming the proposed developments do not occur. The second scenario, the Future Build Condition, examines the impact that the trips generated by the proposed developments will have on traffic operations within the study area under the same five-year planning horizon.

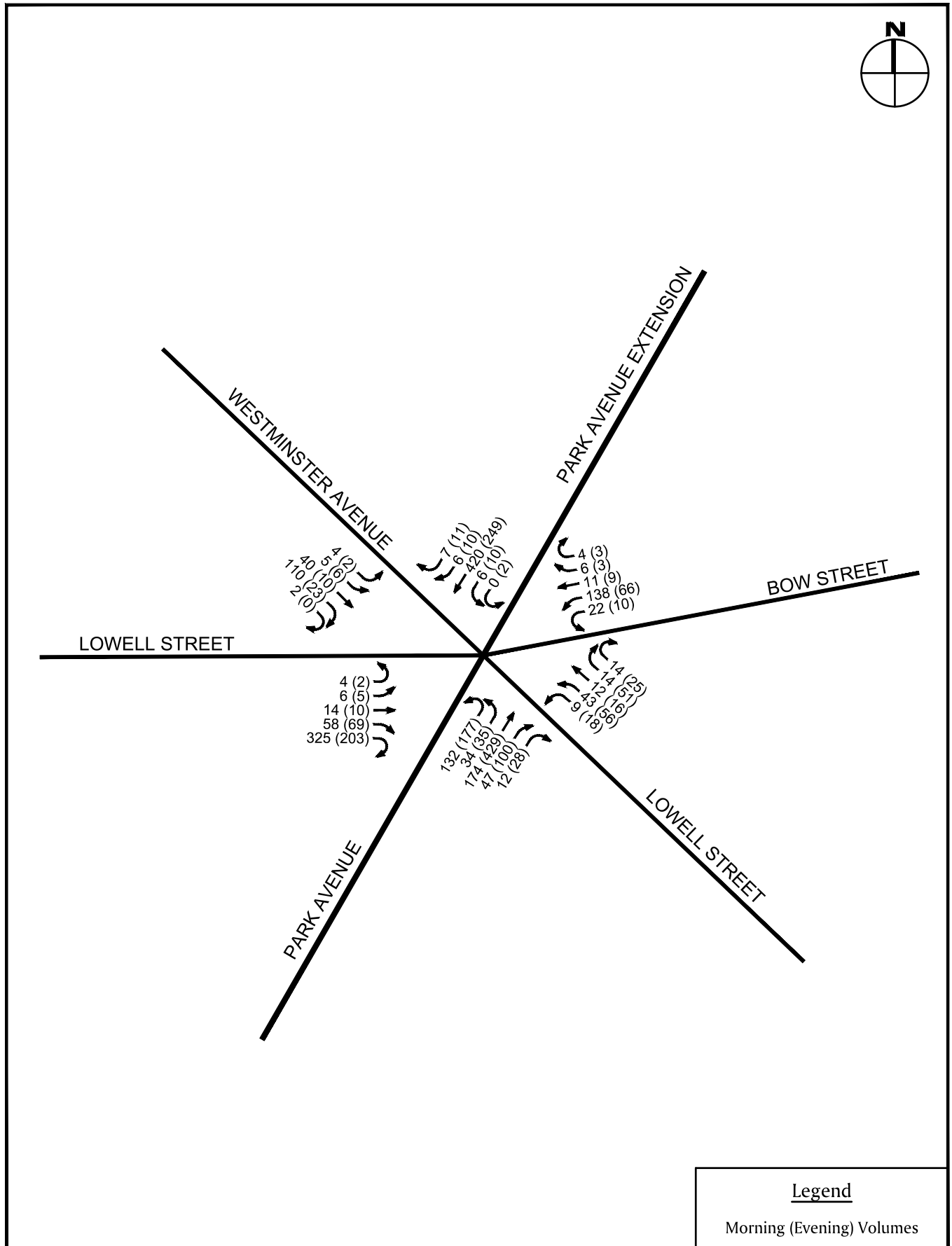
### 2.1 Future No-Build Conditions

In order to evaluate traffic impacts associated with the proposed redevelopment, future No-Build Condition traffic volumes were examined to provide a baseline condition for comparison. The No-Build Condition traffic volumes were projected for the year 2021 based on baseline traffic volume data.

Future No-Build Condition traffic volume projections generally consist of general background growth, and traffic generated from specific proposed developments in the study area. Typically, background growth is a function of changes in population, future land development, increased economic activity, and changes in travel patterns.

In order to determine traffic growth in the area, traffic volumes were compared between those collected in 2007 for the Improvements Study and the current 2016 volumes. Based on the total number of vehicles entering the intersection, the weekday afternoon volumes are relatively similar (1,535 in 2007 versus 1,542 in 2016), resulting in a growth rate of 0.05 percent per year. In addition, weekday daily traffic volumes were compared between 2007 and 2016 based on the ATR data collected on Lowell Street; these volumes indicate a 0.94 percent per year growth rate. Based on this information, an annual growth rate of 1 percent was applied for the five-year planning period. It is expected that this growth rate will also account for any unknown specific developments that may occur within the five-year planning horizon.

The 2021 No Build condition volumes were developed by applying the annual growth rate of 1 percent per year compounded over five years to the Existing Conditions traffic volumes. Figure 3 displays the 2021 Future No-Build traffic volumes for the weekday morning and afternoon peak hours.



2021 No-Build Condition Weekday Peak Hour Traffic Volumes  
 19R Park Avenue  
 Arlington, Massachusetts

Figure 3  
 Not to Scale

## 2.2 Future Build Conditions

In order to evaluate the effect of the project on traffic in the study area, vehicle trips associated with the proposed residential developments were projected, distributed, and assigned to the adjacent roadway network. These incremental vehicle-trips were added to No-Build Condition traffic volumes to form the Build Condition traffic volumes.

### 2.2.1 Project Generated Traffic

Trips for the proposed 38-unit residential development can be estimated using data from the Institute of Transportation Engineers (ITE) Trip Generation Manual (Manual), which is the standard practice for traffic studies and is approved for use by MassDOT. Trip generation calculations were performed using ITE Land Use Code 220 – Apartments and are presented in Table 4. Trip generation calculations are contained in the Appendix.

**Table 4: Trip Generation Summary**

	Weekday Morning Peak Hour (vehicle-trips)			Weekday Afternoon Peak Hour (vehicle-trips)			Weekday Daily Trips
	<u>Enter</u>	<u>Exit</u>	<u>Total</u>	<u>Enter</u>	<u>Exit</u>	<u>Total</u>	<u>Total</u>
38 Apartment Units*	4	18	22	25	14	39	354

*\*based on ITE LUC 220 – Apartments*

Table 4 shows that the proposed residential developments are expected to generate approximately 22 vehicle trips (4 entering, 18 exiting) during the weekday morning peak hour, 39 vehicle trips (25 entering, 14 exiting) during the weekday afternoon peak hour, and 354 vehicle trips during an average weekday.

### 2.2.2 Vehicular Trip Reduction

As discussed above, the 38-unit residential lot will include 23 parking spaces (including 3 accessible parking spaces). However, as mentioned previously, the Client has polled potential tenants on the waitlist and approximately 70 percent of those responding have indicated that they will not have a car and are expected to use other modes of transportation (walking, bicycling, transit).

The Housing Corporation of Arlington has prepared and submitted a Transportation Demand Management (TDM) Plan outlining several strategies intended to discourage the tenants' use of cars and promote non-vehicular modes of transportation. The TDM plan currently includes items such as: providing one or more spaces for Zipcar parking and use; monetary credits for Zipcar membership and transit pass fees; space for indoor and outdoor bicycle parking; as well as charging tenants for the use of parking spaces on-site.

The site is located within a 5-minute walk of Massachusetts Avenue, which is served by MBTA bus routes 77 and 79, connecting to Harvard or Alewife Stations and the MBTA subway system. Additionally, the Client is proposing to construct a bridge to provide a direct connection between the Project site and the adjacent Minuteman Commuter Bikeway.

A review of US Census data<sup>1</sup> indicates that in the Town of Arlington, approximately 64% of workers drive alone or in a carpool, while the remaining 36% use an alternate mode of transportation. Based on these data, the trips estimated for the proposed residential unit have been reduced by 30 percent to provide a conservative estimate of the number of vehicular trips to the site; these calculations are shown in Table 5R. However, due to the Project's TDM program and its proximity to transit, bicycle, and pedestrian accommodations as outlined above, it is expected that the actual number of vehicular trips produced by the Project will be fewer than those estimated in Table 5R.

**Table 5R: Reduction in Vehicle Trips**

	Weekday Morning Peak Hour (vehicle-trips)			Weekday Afternoon Peak Hour (vehicle-trips)			Weekday Daily Trips
	<u>Enter</u>	<u>Exit</u>	<u>Total</u>	<u>Enter</u>	<u>Exit</u>	<u>Total</u>	<u>Total</u>
<i>Estimated trips for 38 Apartment Units*</i>	4	18	22	25	14	39	354
<i>30 percent non-vehicular trips</i>	1	5	6	8	4	12	106
<i>Resulting vehicle-trips</i>	3	13	16	17	10	27	248

*\*based on ITE LUC 220 – Apartments*

Table 5R shows that, assuming 30 percent of tenants will not drive, the expected number of vehicle trips will be 16 during the weekday morning peak hour (3 entering, 13 exiting), 27 trips during the weekday afternoon peak hour (17 entering, 10 exiting), and 248 trips during a typical weekday.

### 2.2.3 Trip Generation Comparison

As discussed above, a proposed 9-unit residential development is slated for the site at 127 Lowell Street, which was formerly occupied by the Highrock Covenant Preschool. The preschool, which closed in June 2016, enrolled 65 students, with some attending full-time and some part-time.

For the purposes of comparison, trips for the former preschool have been estimated using ITE LUC 565 – Daycare Center. The proposed 9-unit residential development is not expected to generate any vehicle trips; no parking spaces are proposed for the site. Table 6R compares the anticipated vehicle-trips to be generated by the proposed 38-unit residential development (see Table 5R) to the trips expected to have been generated by the former preschool.

<sup>1</sup> Factfinder.census.gov, Means of Transportation to Work, Arlington CDP, Massachusetts, 2015

**Table 6R: Trip Generation Comparison**

	Weekday Morning Peak Hour (vehicle-trips)			Weekday Afternoon Peak Hour (vehicle-trips)			Weekday Daily Trips
	<u>Enter</u>	<u>Exit</u>	<u>Total</u>	<u>Enter</u>	<u>Exit</u>	<u>Total</u>	<u>Total</u>
<i>Vehicle-trips for 38 Apartment Units<sup>a</sup></i>	3	13	16	17	10	27	248
<i>Former Preschool<sup>b</sup></i>	28	24	52	25	28	53	278
<i>Difference</i>	-25	-11	-36	-8	-18	-26	-30

<sup>a</sup>see Table 5<sup>b</sup>based on 65 students using ITE LUC 565 – Daycare Center

Table 6R shows that when compared to the former preschool use, the proposed 38-unit residential development is expected to generate approximately 36 fewer vehicle trips (25 fewer entering, 11 fewer exiting) during the weekday morning peak hour, 26 fewer vehicle trips (8 fewer entering, 18 fewer exiting) during the weekday afternoon peak hour, and 30 fewer vehicle trips during an average weekday. However, as discussed in Section 2.2.2, the actual number of vehicle trips to the site is expected to be lower than those estimated. Therefore, the vehicular net effect of the residential developments by HCA is expected to be below that of the former preschool.

## 2.2.4 Trip Distribution and Assignment

Trip generation results quantify trips associated with any proposed project. In order to assess the impacts related to these additional traffic volumes, vehicle trips must be distributed onto the local roadway network. The vehicle trips generated to and from the site for 19R Park Avenue (38 units) were assigned based on the existing travel patterns through Downing Square. The patterns were developed assuming that the majority of trips to/from the site will be traveling to/from the direction of Boston and Cambridge via Route 2 and Summer Street (Route 2A). Table 7 below outlines the expected trip distribution patterns to/from the local roadways.

**Table 7: Trip Distribution**

<u>TO/FROM</u>	Lowell Street West	Park Avenue	Lowell Street East	Bow Street	Park Avenue Extension	Westminster Avenue	<i><b>TOTAL</b></i>
<u>DISTRIBUTION TO/FROM</u>	25%	50%	5%	15%	5%	0%	<i><b>100%</b></i>

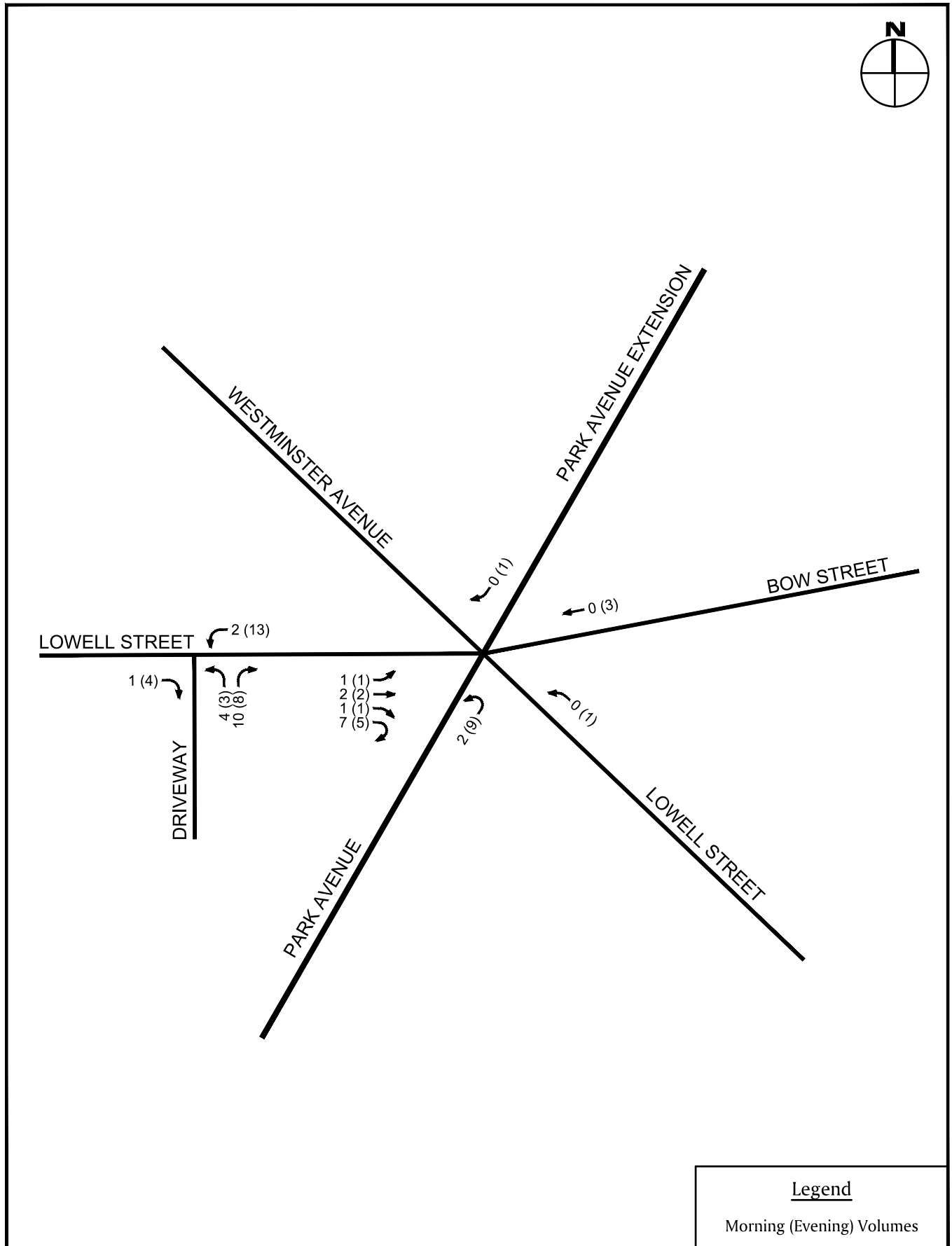


Expected traffic volumes generated by the proposed project (Table 5) have been distributed according to the traffic patterns shown in Table 6 and are presented in Figure 4. Year 2021 Build Condition peak hour traffic volumes, which consist of the addition of the trips generated by the residential developments to the 2021 No Build condition traffic volumes, are displayed in Figure 5. Trip generation calculations are contained in the Appendix.

### **2.2.5 Proposed Bicycle and Pedestrian Accommodations**

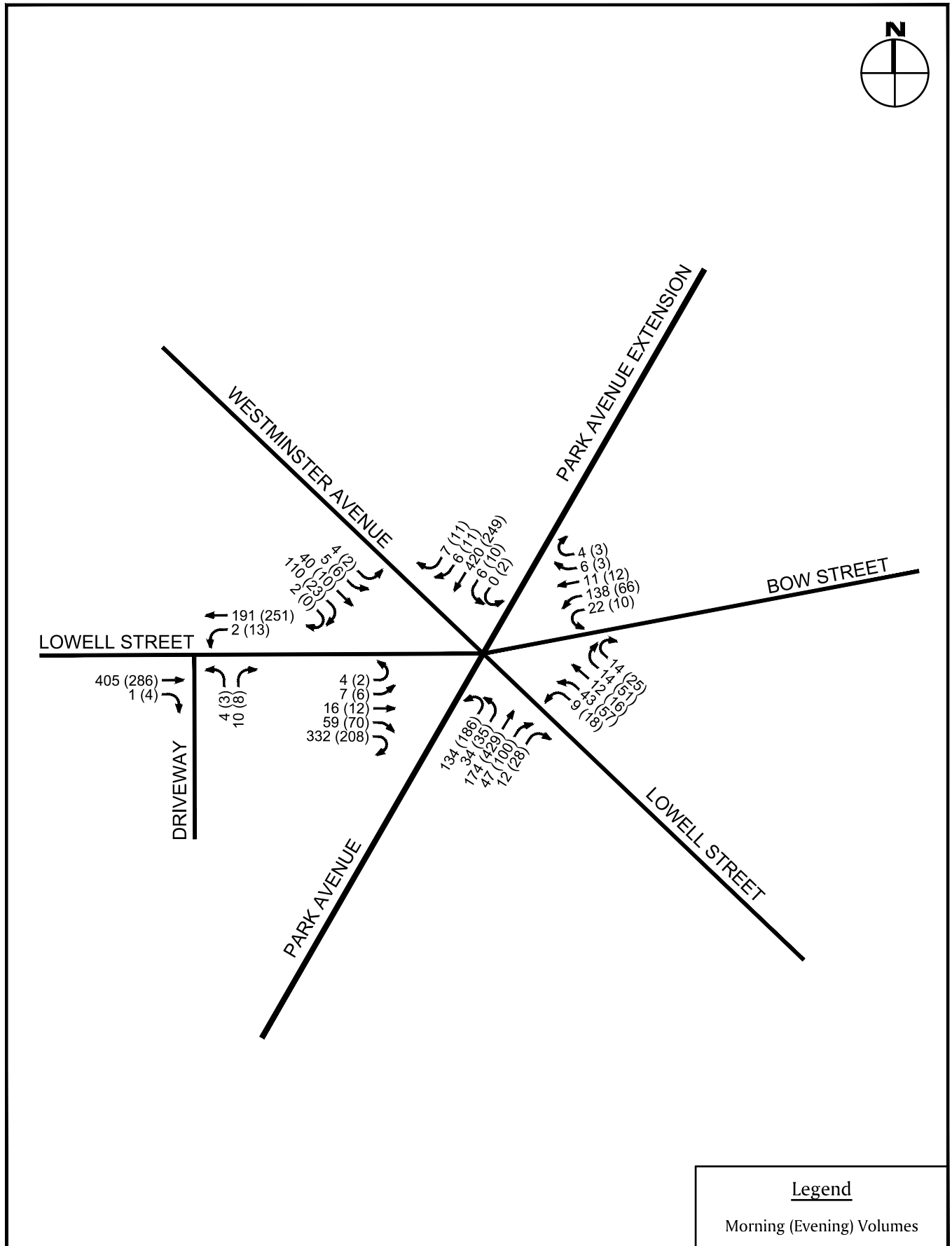
The Project proposes both indoor bicycle storage and outdoor bicycle racks, as shown on the Site Plan. Also as noted above, the Client is proposing to construct a bridge to provide a direct connection between the Project site and the adjacent Minuteman Commuter Bikeway. This bridge will connect to the site via both stairs and an ADA/AAB accessible ramp, allowing access between the Project site and the Bikeway.

The Site Plan shows a sidewalk on the east side of the site, providing a pedestrian connection between Lowell Street and both residential buildings. In addition, the proposed bridge on the Site Plans would allow both bicyclists and pedestrians easier access to the Minuteman Commuter Bikeway, thereby facilitating connections to the path between Gold's Gym and the Bikeway, businesses on Massachusetts Avenue, and to the existing bus routes documented in Section 1.3.



Site-Generated Project Trips  
19R Park Avenue  
Arlington, Massachusetts

Figure 4  
Not to Scale



2021 Build Condition Weekday Peak Hour Traffic Volumes  
19R Park Avenue  
Arlington, Massachusetts

Figure 5  
Not to Scale



## Chapter 3: Traffic Impact Analysis

### 3.1 Capacity Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic flow within a study area. To assess the quality of traffic flow, capacity analyses were conducted at study area intersections for the Baseline, Future No-Build, and Future Build conditions. The capacity analyses provide a standardized indication of the ability of the intersections to accommodate traffic demands placed upon them.

### 3.2 Levels of Service Criteria

A primary result of capacity analyses is the assignment of Levels of Service (LOS) to traffic facilities under various traffic flow conditions. Analyses were conducted using methods defined in the Highway Capacity Manual 2010 (TRB, 2010) for unsignalized intersections. The concept of Level of Service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists.

A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. In so doing, Level of Service provides an index to quality of traffic flow.

Six Levels of Service are defined for each type of facility. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Since the Level of Service of a traffic facility is a function of traffic flows placed upon it, an intersection may operate at a wide range of Levels of Service, depending on time of day, day of week, or period of year.

The average delay per vehicle approaching an intersection is used to quantify the Level of Service at a particular intersection. This is discussed briefly below, and LOS designations are defined in Table 8. Average delay measures the mean stopped delay experienced by vehicles entering an intersection during the design period. Average delay is measured for each individual turning movement that must yield the right of way, and for the intersection as a whole, if signalized (including through vehicles that experience no delay).

**Table 8: Level of Service Designations for Unsignalized Intersections**

<u>Category</u>	<u>Delay (sec/veh)</u>
LOS A	0.0 – 10.0
LOS B	10.1 – 15.0
LOS C	15.1 – 25.0
LOS D	25.1 – 35.0
LOS E	35.1 – 50.0
LOS F	50.1 +

*Source: Transportation Research Board, Highway Capacity Manual, National Research Council, 2010.*

### 3.3 Operating Conditions

The results of the capacity analysis for the study area intersections evaluated are summarized below. The SIDRA Intersection traffic analysis software package (Version 6.1 Plus) was employed to evaluate operating conditions at the unsignalized intersections. This software is on the Massachusetts Department of Transportation (MassDOT) approved list of traffic analysis tools.

The results of the capacity analyses at the study area intersections are presented in Table 9R. Queues reported are the 95<sup>th</sup> percentile queues. Capacity analysis worksheets are included in the Appendix.

**Table 9R: LOS Summary**

	2016 Existing Conditions				2021 No-Build Conditions				2021 Build Conditions			
	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)	Ave. Delay (sec)	LOS	V/C Ratio	Queue Length (feet)
<b>WEEKDAY MORNING PEAK HOUR</b>												
<i><b>Downing Square</b></i>												
Lowell Street EB	26.7	D	0.73	216	33.4	D	0.81	278	36.7	E	0.84	312
Bow Street WB	>50	F	1.08	345	>50	F	>1.20	545	>50	F	>1.20	565
Park Avenue NB	0.0	A	0.23	0	0.0	A	0.24	0	0.0	A	0.24	0
Park Ave Ext SB	17.3	C	0.61	150	19.1	C	0.66	179	19.2	C	0.66	181
Westminster Avenue SEB	30.0	D	0.54	75	36.4	E	0.62	92	37.3	E	0.63	93
Lowell Street NWB	18.7	C	0.26	26	20.8	C	0.31	32	20.9	C	0.31	32
<i><b>Lowell Street at Driveway</b></i>												
Lowell Street EB									0.0	A	0.24	0
Lowell Street WB		Not Applicable				Not Applicable			2.8	A	0.11	1
Site Driveway NB									11.7	B	0.03	3
<b>WEEKDAY AFTERNOON PEAK HOUR</b>												
<i><b>Downing Square</b></i>												
Lowell Street EB	18.5	C	0.53	100	21.1	C	0.59	123	22.6	C	0.62	137
Bow Street WB	43.3	E	0.50	57	>50	F	0.60	73	>50	F	0.63	79
Park Avenue NB	0.1	A	0.43	0	0.1	A	0.45	0	0.1	A	0.46	0
Park Ave Ext SB	14.1	B	0.42	63	14.9	B	0.46	74	15.2	C	0.47	76
Westminster Avenue SEB	17.1	C	0.12	11	18.5	C	0.15	14	18.7	C	0.15	14
Lowell Street NWB	27.2	D	0.52	71	32.5	D	0.59	87	33.6	D	0.60	90
<i><b>Lowell Street at Driveway</b></i>												
Lowell Street EB									0.0	A	0.17	0
Lowell Street WB		Not Applicable				Not Applicable			3.1	A	0.16	3
Site Driveway NB									10.8	B	0.02	2
<i>Abbreviations: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right</i>												

During the weekday morning peak hour, the Lowell Street approach currently operates at LOS D and is expected to operate at LOS D and E during the future No Build and Build conditions, respectively. During the weekday afternoon peak hour, this approach is expected to operate at LOS C under all operating conditions.

The Bow Street westbound approach currently operates under LOS F during the weekday morning peak hour and LOS E during the weekday afternoon peak hour. This approach is expected to operate at LOS F during both peak hours under both future conditions.

Under future Build conditions, the Site Driveway is anticipated to operate at LOS B during both peak hours, with negligible queue lengths.

When compared to the No Build condition, the overall Levels of Service (LOS) are not significantly impacted by incremental project-generated traffic, with expected delays to increase by no more than 4 seconds on any one approach.



## Chapter 4: Conclusions

BSC Group has evaluated traffic impacts associated with the proposed residential developments to be located at 19R Park Avenue in Arlington, Massachusetts. Using standard traffic engineering practices, this Traffic Impact Study has:

- Reviewed existing traffic and roadway conditions in the vicinity of the site;
- Determined background traffic growth for the study area between 2016 and 2021
- Estimated and distributed the additional vehicular traffic that will be generated by the proposed developments; and
- Presented an evaluation of traffic impacts due to the proposed development.

The findings of this study are summarized below:

- The minimum required Stopping Sight Distance (SSD) is available for vehicles traveling both eastbound and westbound on Lowell Street based on the posted speed limit of 30 MPH.
- The calculated crash rate at the intersection of Downing Square is below both the statewide and District 4 averages.
- The Client has submitted a Transportation Demand Management (TDM) Plan including items such as: providing one or more spaces for Zipcar parking and use; monetary credits for Zipcar membership and transit pass fees; space for indoor and outdoor bicycle parking; as well as charging tenants for the use of parking spaces on-site.
- The proposed project is expected to generate 16 vehicle trips during the weekday morning peak hour (3 entering, 13 exiting), 27 vehicle trips during the weekday afternoon peak hour (17 entering, 10 exiting), and 248 vehicle trips during a typical weekday.
- When compared to the former preschool use at 127 Lowell Street, the proposed 38-unit residential development is expected to generate approximately 36 fewer vehicle trips (25 fewer entering, 11 fewer exiting) during the weekday morning peak hour, 26 fewer vehicle trips (8 fewer entering, 18 fewer exiting) during the weekday afternoon peak hour, and 30 fewer vehicle trips during an average weekday.
- When compared to the No-Build condition, the Levels of Service (LOS) for critical movements at Downing Square are not significantly impacted by incremental project-generated traffic.

It is the opinion of BSC Group that the existing roadway network will be able to accommodate the new vehicle trips associated with the proposed residential development located at 19R Park Avenue in Arlington, Massachusetts.







## List of Appendices

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Appendix A: Traffic Count Data

Appendix B: Transit Information

Appendix C: Crash Rate Worksheets

Appendix D: Trip Generation Calculations

Appendix E: Census Data

Appendix F: Capacity Analysis Worksheets





## Appendix A: Traffic Count Data

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Lowell Street  
west of Park Avenue Extension  
City, State: Arlington, MA  
Client: BSC Group/ S. Offei-Addo



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165340 A Volume  
Site Code: TBD

Start Time	EB		WB		Combin ed		19-Oct-16 Wed	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		
12:00	2	46	1	35	3	81		
12:15	0	45	4	47	4	92		
12:30	2	43	0	39	2	82		
12:45	0	44	3	40	3	84	339	
01:00	2	45	2	38	4	83		
01:15	0	54	0	30	0	84		
01:30	2	51	1	36	3	87		
01:45	1	47	0	50	1	97	351	
02:00	0	52	0	45	0	97		
02:15	1	59	2	47	3	106		
02:30	1	53	2	44	3	97		
02:45	1	44	0	60	1	104	404	
03:00	1	57	1	59	2	116		
03:15	0	51	0	64	0	115		
03:30	0	62	1	82	1	144		
03:45	0	69	1	64	1	133	508	
04:00	3	54	0	57	3	111		
04:15	1	60	0	54	1	114		
04:30	6	65	1	64	7	129		
04:45	3	79	1	56	4	135	489	
05:00	3	73	1	56	4	129		
05:15	10	66	4	57	14	123		
05:30	25	78	3	65	28	143		
05:45	21	80	7	67	28	147	542	
06:00	31	65	10	67	41	132		
06:15	34	61	13	47	47	108		
06:30	78	54	20	47	98	101		
06:45	76	57	23	41	99	98	439	
07:00	111	57	35	32	146	89		
07:15	90	40	51	31	141	71		
07:30	84	24	46	27	130	51		
07:45	77	40	38	27	115	67	278	
08:00	64	31	54	39	118	70		
08:15	79	17	60	25	139	42		
08:30	74	16	54	19	128	35		
08:45	87	29	46	21	133	50	197	
09:00	105	35	33	24	138	59		
09:15	102	25	42	27	144	52		
09:30	68	12	39	19	107	31		
09:45	75	9	42	16	117	25	167	
10:00	51	14	43	12	94	26		
10:15	51	2	41	11	92	13		
10:30	41	8	31	12	72	20		
10:45	42	10	36	9	78	19	78	
11:00	41	7	36	17	77	24		
11:15	41	7	33	8	74	15		
11:30	45	4	41	4	86	8		
11:45	55	4	43	6	98	10	57	
Total	1687	2005	945	1844	2632	3849		
Percent	64.1%	52.1%	35.9%	47.9%				
Day Total		3692		2789		6481		
Peak	08:30	-	05:00	-	08:30	-	05:15	-
Vol.	368	-	297	-	543	-	545	-
P.H.F.	0.876	-	0.928	-	0.820	-	0.927	-

Lowell Street  
west of Park Avenue Extension  
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165340 A Volume  
Site Code: TBD

Start Time	EB			WB			Combin ed		20-Oct-16 Thu			
	A.M.		P.M.	A.M.		P.M.	A.M.		P.M.			
12:00	1		47	2		38	3		85			
12:15	3		40	4		39	7		79			
12:30	0		49	1		26	1		75			
12:45	0	4	49	185	2	9	34	137	2	13	83	322
01:00	1		43	0		39	1		82			
01:15	0		47	2		36	2		83			
01:30	2		41	0		35	2		76			
01:45	0	3	45	176	1	3	46	156	1	6	91	332
02:00	1		55	0		32	1		87			
02:15	1		62	0		31	1		93			
02:30	0		55	1		42	1		97			
02:45	2	4	68	240	0	1	51	156	2	5	119	396
03:00	0		40	0		65	0		105			
03:15	0		57	1		41	1		98			
03:30	1		60	2		62	3		122			
03:45	2	3	62	219	0	3	66	234	2	6	128	453
04:00	1		55	1		67	2		122			
04:15	2		67	0		56	2		123			
04:30	6		54	0		61	6		115			
04:45	4	13	52	228	3	4	65	249	7	17	117	477
05:00	6		79	2		59	8		138			
05:15	10		68	4		52	14		120			
05:30	20		78	4		66	24		144			
05:45	18	54	55	280	7	17	57	234	25	71	112	514
06:00	23		74	12		68	35		142			
06:15	46		71	16		46	62		117			
06:30	72		57	15		49	87		106			
06:45	94	235	52	254	20	63	51	214	114	298	103	468
07:00	103		35	30		61	133		96			
07:15	98		55	35		35	133		90			
07:30	85		35	32		31	117		66			
07:45	77	363	30	155	46	143	20	147	123	506	50	302
08:00	74		31	56		28	130		59			
08:15	72		37	65		24	137		61			
08:30	92		25	58		22	150		47			
08:45	70	308	28	121	56	235	18	92	126	543	46	213
09:00	97		29	55		24	152		53			
09:15	88		31	37		15	125		46			
09:30	69		18	40		18	109		36			
09:45	70	324	19	97	32	164	17	74	102	488	36	171
10:00	66		15	36		19	102		34			
10:15	45		16	48		8	93		24			
10:30	41		14	28		13	69		27			
10:45	56	208	8	53	38	150	13	53	94	358	21	106
11:00	36		10	35		11	71		21			
11:15	53		10	36		7	89		17			
11:30	49		7	38		8	87		15			
11:45	56	194	5	32	48	157	3	29	104	351	8	61
Total	1713		2040		949		1775		2662		3815	
Percent	64.4%		53.5%		35.6%		46.5%					
Day Total		3753		2724		6477						
Peak	06:45	-	05:00	-	08:00	-	03:30	-	08:15	-	04:45	-
Vol.	380	-	280	-	235	-	251	-	565	-	519	-
P.H.F.	0.922		0.886		0.904		0.937		0.929		0.901	

Lowell Street  
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Email: datarequests@pdillc.com

165340 A Class  
Site Code: TBD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/19/1														
6	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
05:00	0	54	2	1	2	0	0	0	0	0	0	0	0	59
06:00	5	164	33	0	12	5	0	0	0	0	0	0	0	219
07:00	5	299	46	2	8	1	0	1	0	0	0	0	0	362
08:00	4	258	31	0	8	2	0	1	0	0	0	0	0	304
09:00	7	290	36	2	12	2	0	1	0	0	0	0	0	350
10:00	0	157	23	0	4	0	0	1	0	0	0	0	0	185
11:00	5	137	31	1	8	0	0	0	0	0	0	0	0	182
12 PM	5	148	21	0	2	1	0	1	0	0	0	0	0	178
13:00	1	164	27	1	3	0	1	0	0	0	0	0	0	197
14:00	3	172	28	1	3	1	0	0	0	0	0	0	0	208
15:00	3	201	29	0	6	0	0	0	0	0	0	0	0	239
16:00	5	231	17	0	5	0	0	0	0	0	0	0	0	258
17:00	5	261	24	0	7	0	0	0	0	0	0	0	0	297
18:00	3	209	17	3	5	0	0	0	0	0	0	0	0	237
19:00	0	145	13	0	1	2	0	0	0	0	0	0	0	161
20:00	2	81	8	0	2	0	0	0	0	0	0	0	0	93
21:00	1	74	5	0	1	0	0	0	0	0	0	0	0	81
22:00	0	31	2	0	1	0	0	0	0	0	0	0	0	34
23:00	0	17	5	0	0	0	0	0	0	0	0	0	0	22
Total	54	3114	402	11	91	14	1	5	0	0	0	0	0	3692
Percent	1.5%	84.3%	10.9%	0.3%	2.5%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	07:00	07:00	06:00	06:00		07:00						07:00
Vol.	7	299	46	2	12	5		1						362
PM Peak	12:00	17:00	15:00	18:00	17:00	19:00	13:00	12:00						17:00
Vol.	5	261	29	3	7	2	1	1						297

Lowell Street  
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EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/20/1														
6	1	3	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
05:00	0	47	6	0	1	0	0	0	0	0	0	0	0	54
06:00	0	183	41	0	6	4	0	0	1	0	0	0	0	235
07:00	7	303	37	2	10	4	0	0	0	0	0	0	0	363
08:00	2	251	40	1	9	4	0	1	0	0	0	0	0	308
09:00	3	269	40	5	4	1	0	2	0	0	0	0	0	324
10:00	1	164	35	0	5	1	0	1	1	0	0	0	0	208
11:00	4	162	21	0	6	1	0	0	0	0	0	0	0	194
12 PM	1	153	23	0	8	0	0	0	0	0	0	0	0	185
13:00	1	141	26	0	7	1	0	0	0	0	0	0	0	176
14:00	1	200	34	1	4	0	0	0	0	0	0	0	0	240
15:00	3	181	32	1	2	0	0	0	0	0	0	0	0	219
16:00	2	191	28	1	5	0	0	1	0	0	0	0	0	228
17:00	3	247	23	1	6	0	0	0	0	0	0	0	0	280
18:00	2	235	11	0	6	0	0	0	0	0	0	0	0	254
19:00	4	140	10	0	1	0	0	0	0	0	0	0	0	155
20:00	0	114	7	0	0	0	0	0	0	0	0	0	0	121
21:00	1	86	7	0	3	0	0	0	0	0	0	0	0	97
22:00	0	51	2	0	0	0	0	0	0	0	0	0	0	53
23:00	1	25	6	0	0	0	0	0	0	0	0	0	0	32
Total	37	3166	432	12	83	16	0	5	2	0	0	0	0	3753
Percent	1.0%	84.4%	11.5%	0.3%	2.2%	0.4%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	06:00	09:00	07:00	06:00		09:00	06:00					07:00
Vol.	7	303	41	5	10	4		2	1					363
PM Peak	19:00	17:00	14:00	14:00	12:00	13:00		16:00						17:00
Vol.	4	247	34	1	8	1		1						280



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165340 A Class  
Site Code: TBD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/19/1														
6	0	6	1	0	1	0	0	0	0	0	0	0	0	8
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
05:00	0	15	0	0	0	0	0	0	0	0	0	0	0	15
06:00	0	55	8	0	3	0	0	0	0	0	0	0	0	66
07:00	8	144	14	0	3	1	0	0	0	0	0	0	0	170
08:00	4	186	19	0	2	3	0	0	0	0	0	0	0	214
09:00	3	138	12	1	2	0	0	0	0	0	0	0	0	156
10:00	3	125	15	0	6	2	0	0	0	0	0	0	0	151
11:00	2	123	15	1	9	2	0	0	1	0	0	0	0	153
12 PM	0	135	14	0	6	5	0	1	0	0	0	0	0	161
13:00	1	128	16	0	6	3	0	0	0	0	0	0	0	154
14:00	2	164	25	0	4	1	0	0	0	0	0	0	0	196
15:00	5	223	33	0	5	2	0	1	0	0	0	0	0	269
16:00	1	210	18	0	2	0	0	0	0	0	0	0	0	231
17:00	3	214	23	1	3	1	0	0	0	0	0	0	0	245
18:00	1	188	9	0	2	2	0	0	0	0	0	0	0	202
19:00	1	113	3	0	0	0	1	0	0	0	0	0	0	117
20:00	4	92	8	0	0	0	0	0	0	0	0	0	0	104
21:00	0	82	4	0	0	0	0	0	0	0	0	0	0	86
22:00	0	43	1	0	0	0	0	0	0	0	0	0	0	44
23:00	0	33	2	0	0	0	0	0	0	0	0	0	0	35
Total	38	2427	242	3	54	22	0	2	1	0	0	0	0	2789
Percent	1.4%	87.0%	8.7%	0.1%	1.9%	0.8%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	08:00	09:00	11:00	08:00			11:00					08:00
Vol.	8	186	19	1	9	3			1					214
PM Peak	15:00	15:00	15:00	17:00	12:00	12:00		12:00						15:00
Vol.	5	223	33	1	6	5		1						269

Lowell Street  
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165340 A Class  
Site Code: TBD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/20/1														
6	0	7	1	0	1	0	0	0	0	0	0	0	0	9
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
05:00	0	15	1	0	1	0	0	0	0	0	0	0	0	17
06:00	0	55	6	0	1	0	0	1	0	0	0	0	0	63
07:00	2	124	14	0	2	1	0	0	0	0	0	0	0	143
08:00	4	204	19	0	7	1	0	0	0	0	0	0	0	235
09:00	3	144	12	1	3	0	0	1	0	0	0	0	0	164
10:00	0	133	11	0	5	1	0	0	0	0	0	0	0	150
11:00	1	131	13	0	9	2	0	1	0	0	0	0	0	157
12 PM	0	121	15	0	1	0	0	0	0	0	0	0	0	137
13:00	1	131	16	0	5	3	0	0	0	0	0	0	0	156
14:00	1	136	14	1	4	0	0	0	0	0	0	0	0	156
15:00	1	203	28	0	2	0	0	0	0	0	0	0	0	234
16:00	1	219	25	0	4	0	0	0	0	0	0	0	0	249
17:00	0	214	18	0	2	0	0	0	0	0	0	0	0	234
18:00	1	195	15	0	2	1	0	0	0	0	0	0	0	214
19:00	0	142	4	0	0	1	0	0	0	0	0	0	0	147
20:00	1	88	2	0	1	0	0	0	0	0	0	0	0	92
21:00	0	71	3	0	0	0	0	0	0	0	0	0	0	74
22:00	2	49	1	0	1	0	0	0	0	0	0	0	0	53
23:00	0	26	2	0	1	0	0	0	0	0	0	0	0	29
Total	18	2418	220	2	53	10	0	3	0	0	0	0	0	2724
Percent	0.7%	88.8%	8.1%	0.1%	1.9%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	09:00	11:00	11:00		06:00						08:00
Vol.	4	204	19	1	9	2		1						235
PM Peak	22:00	16:00	15:00	14:00	13:00	13:00								16:00
Vol.	2	219	28	1	5	3								249

Lowell Street  
west of Park Avenue Extension  
City, State: Arlington, MA  
Client: BSC Group/ S. Oftei-Addo



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

165340 A Speed  
Site Code: TBD

EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed	
10/19/16	0	0	0	1	3	0	0	0	0	0	0	0	0	4	33	31	
01:00	0	0	1	3	1	0	0	0	0	0	0	0	0	5	30	27	
02:00	0	0	1	0	2	0	0	0	0	0	0	0	0	3	32	29	
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27	
04:00	0	0	1	2	8	2	0	0	0	0	0	0	0	13	34	31	
05:00	1	0	5	27	19	7	0	0	0	0	0	0	0	59	33	29	
06:00	0	8	52	107	43	9	0	0	0	0	0	0	0	219	31	27	
07:00	74	57	118	89	21	3	0	0	0	0	0	0	0	362	27	20	
08:00	27	48	92	107	29	1	0	0	0	0	0	0	0	304	28	23	
09:00	46	72	86	101	43	1	0	1	0	0	0	0	0	350	28	22	
10:00	11	18	49	79	21	7	0	0	0	0	0	0	0	185	29	24	
11:00	8	21	48	79	24	2	0	0	0	0	0	0	0	182	28	24	
12 PM	7	20	35	80	34	2	0	0	0	0	0	0	0	178	30	25	
13:00	5	11	46	103	30	2	0	0	0	0	0	0	0	197	29	26	
14:00	9	16	73	85	22	2	0	0	0	0	0	0	1	208	28	24	
15:00	3	14	77	111	33	1	0	0	0	0	0	0	0	239	28	25	
16:00	9	14	63	123	44	5	0	0	0	0	0	0	0	258	30	26	
17:00	8	24	102	128	32	2	1	0	0	0	0	0	0	297	28	25	
18:00	2	13	72	125	25	0	0	0	0	0	0	0	0	237	28	25	
19:00	1	6	42	90	20	2	0	0	0	0	0	0	0	161	28	26	
20:00	2	2	20	51	16	2	0	0	0	0	0	0	0	93	30	26	
21:00	0	3	5	48	21	3	1	0	0	0	0	0	0	81	32	28	
22:00	0	0	7	13	9	5	0	0	0	0	0	0	0	34	33	29	
23:00	0	0	2	5	10	4	1	0	0	0	0	0	0	22	36	31	
Total %	213 5.8%	347 9.4%	997 27.0%	1558 42.2%	510 13.8%	62 1.7%	3 0.1%	1 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 3692			
AM Peak	07:00	09:00	07:00	06:00	06:00	06:00	09:00							07:00			
Vol.	74	72	118	107	43	9	1							362			
PM Peak	14:00	17:00	17:00	17:00	16:00	16:00	17:00								14:00	17:00	
Vol.	9	24	102	128	44	5	1								1	297	

Stats

15th Percentile :	18 MPH
50th Percentile :	24 MPH
85th Percentile :	29 MPH
95th Percentile :	32 MPH
Mean Speed(Average) :	24 MPH
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	2555
Percent in Pace :	69.2%
Number of Vehicles > 25 MPH :	1823
Percent of Vehicles > 25 MPH :	49.4%

Lowell Street  
west of Park Avenue Extension  
City, State: Arlington, MA  
Client: BSC Group/ S. Oftei-Addo



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

165340 A Speed  
Site Code: TBD

EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/20/16	0	1	0	2	1	0	0	0	0	0	0	0	0	4	31	26
01:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3	31	27
02:00	0	1	0	0	3	0	0	0	0	0	0	0	0	4	33	28
03:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3	27	25
04:00	0	0	1	5	4	3	0	0	0	0	0	0	0	13	35	30
05:00	0	0	6	20	24	4	0	0	0	0	0	0	0	54	33	29
06:00	4	22	58	108	38	5	0	0	0	0	0	0	0	235	30	26
07:00	<b>123</b>	<b>50</b>	<b>120</b>	<b>59</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>25</b>	<b>18</b>
08:00	<b>49</b>	<b>52</b>	<b>107</b>	<b>76</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>308</b>	<b>27</b>	<b>21</b>
09:00	<b>14</b>	<b>48</b>	<b>93</b>	<b>121</b>	<b>41</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>324</b>	<b>28</b>	<b>24</b>
10:00	4	17	57	101	27	2	0	0	0	0	0	0	0	208	28	25
11:00	4	11	76	77	21	4	<b>1</b>	0	0	0	0	0	0	194	28	25
12 PM	3	<b>21</b>	58	86	16	1	0	0	0	0	0	0	0	185	28	24
13:00	2	13	56	86	14	5	0	0	0	0	0	0	0	176	28	25
14:00	<b>11</b>	21	80	100	27	1	0	0	0	0	0	0	0	240	28	24
15:00	5	15	53	92	<b>48</b>	<b>6</b>	0	0	0	0	0	0	0	219	31	26
16:00	3	16	62	93	48	6	0	0	0	0	0	0	0	228	31	26
17:00	8	19	79	<b>123</b>	47	4	0	0	0	0	0	0	0	<b>280</b>	29	25
18:00	5	9	<b>84</b>	123	31	2	0	0	0	0	0	0	0	254	28	25
19:00	2	4	42	83	23	0	<b>1</b>	0	0	0	0	0	0	155	29	26
20:00	0	2	26	63	27	3	0	0	0	0	0	0	0	121	31	27
21:00	1	1	9	54	29	3	0	0	0	0	0	0	0	97	32	28
22:00	0	0	10	29	11	3	0	0	0	0	0	0	0	53	31	28
23:00	0	1	3	18	7	2	1	0	0	0	0	0	0	32	32	28
Total	238	324	1082	1522	521	63	3	0	0	0	0	0	0	3753		
%	6.3%	8.6%	28.8%	40.6%	13.9%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	07:00	09:00	09:00	09:00	11:00							07:00		
Vol.	123	52	120	121	41	7	1							363		
PM Peak	14:00	12:00	18:00	17:00	15:00	15:00	19:00							17:00		
Vol.	11	21	84	123	48	6	1							280		

Stats

15th Percentile :	19 MPH
50th Percentile :	24 MPH
85th Percentile :	29 MPH
95th Percentile :	32 MPH
Mean Speed(Average) :	24 MPH
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	2604
Percent in Pace :	69.4%
Number of Vehicles > 25 MPH :	1805
Percent of Vehicles > 25 MPH :	48.1%

Lowell Street  
west of Park Avenue Extension  
City, State: Arlington, MA  
Client: BSC Group/ S. Oftei-Addo



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

165340 A Speed  
Site Code: TBD

WB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/19/																
16	0	0	3	3	2	0	0	0	0	0	0	0	0	8	31	26
01:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3	31	27
02:00	0	1	2	1	0	0	0	0	0	0	0	0	0	4	26	22
03:00	1	0	0	1	1	0	0	0	0	0	0	0	0	3	31	22
04:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2	32	30
05:00	1	0	0	10	4	0	0	0	0	0	0	0	0	15	31	27
06:00	0	0	14	38	13	0	1	0	0	0	0	0	0	66	30	27
07:00	4	13	51	68	<b>30</b>	2	<b>2</b>	0	0	0	0	0	0	170	30	25
08:00	2	9	50	<b>118</b>	30	<b>5</b>	0	0	0	0	0	0	0	<b>214</b>	29	26
09:00	0	8	43	76	27	2	0	0	0	0	0	0	0	156	30	26
10:00	<b>5</b>	16	<b>55</b>	60	13	2	0	0	0	0	0	0	0	151	28	24
11:00	5	<b>18</b>	46	68	14	2	0	0	0	0	0	0	0	153	28	24
12 PM	0	2	36	87	32	4	0	0	0	0	0	0	0	161	30	27
13:00	2	4	36	84	25	3	0	0	0	0	0	0	0	154	29	26
14:00	3	4	54	101	32	2	0	0	0	0	0	0	0	196	29	26
15:00	<b>7</b>	20	56	<b>133</b>	48	<b>5</b>	0	0	0	0	0	0	0	<b>269</b>	30	26
16:00	0	4	49	125	<b>49</b>	3	<b>1</b>	0	0	0	0	0	0	231	30	27
17:00	6	<b>28</b>	<b>87</b>	88	34	2	0	0	0	0	0	0	0	245	28	24
18:00	2	3	47	118	30	2	0	0	0	0	0	0	0	202	29	26
19:00	2	8	28	56	21	2	0	0	0	0	0	0	0	117	30	26
20:00	1	4	22	58	16	3	0	0	0	0	0	0	0	104	30	26
21:00	2	0	17	41	24	2	0	0	0	0	0	0	0	86	31	27
22:00	1	1	12	18	10	2	0	0	0	0	0	0	0	44	31	27
23:00	0	0	8	15	11	1	0	0	0	0	0	0	0	35	32	28
Total	44	143	717	1369	468	44	4	0	0	0	0	0	0	2789		
%	1.6%	5.1%	25.7%	49.1%	16.8%	1.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	10:00	08:00	07:00	08:00	07:00							08:00		
Vol.	5	18	55	118	30	5	2							214		
PM Peak	15:00	17:00	17:00	15:00	16:00	15:00	16:00							15:00		
Vol.	7	28	87	133	49	5	1							269		

Stats

15th Percentile :	20 MPH
50th Percentile :	25 MPH
85th Percentile :	30 MPH
95th Percentile :	33 MPH
Mean Speed(Average) :	26 MPH
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	2086
Percent in Pace :	74.8%
Number of Vehicles > 25 MPH :	1611
Percent of Vehicles > 25 MPH :	57.8%

Lowell Street  
west of Park Avenue Extension  
City, State: Arlington, MA  
Client: BSC Group/ S. Oftei-Addo



PRECISION  
D A T A  
INDUSTRIES, LLC

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Office: 508-875-0100 Fax: 508-875-0118  
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165340 A Speed  
Site Code: TBD

WB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
10/20/ 16	0	0	0	5	3	1	0	0	0	0	0	0	0	9	33	30
01:00	0	0	1	0	2	0	0	0	0	0	0	0	0	3	32	29
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	27
03:00	0	1	0	1	1	0	0	0	0	0	0	0	0	3	31	25
04:00	0	0	0	2	2	0	0	0	0	0	0	0	0	4	32	30
05:00	0	0	1	7	9	0	0	0	0	0	0	0	0	17	32	29
06:00	2	0	13	30	16	2	0	0	0	0	0	0	0	63	31	27
07:00	3	9	46	71	13	0	1	0	0	0	0	0	0	143	28	25
08:00	3	19	78	99	31	5	0	0	0	0	0	0	0	235	29	25
09:00	2	5	49	75	30	3	0	0	0	0	0	0	0	164	30	26
10:00	1	11	55	63	17	3	0	0	0	0	0	0	0	150	28	25
11:00	1	12	43	84	17	0	0	0	0	0	0	0	0	157	28	25
12 PM	4	6	42	65	20	0	0	0	0	0	0	0	0	137	28	25
13:00	2	4	53	84	13	0	0	0	0	0	0	0	0	156	28	25
14:00	4	8	44	76	21	3	0	0	0	0	0	0	0	156	29	25
15:00	1	4	53	118	55	3	0	0	0	0	0	0	0	234	31	27
16:00	3	5	51	136	52	1	0	0	0	0	0	0	1	249	30	27
17:00	1	5	57	120	44	5	2	0	0	0	0	0	0	234	30	27
18:00	2	11	53	110	35	2	0	0	0	0	0	0	1	214	29	26
19:00	2	9	41	70	21	3	1	0	0	0	0	0	0	147	29	26
20:00	1	5	31	40	15	0	0	0	0	0	0	0	0	92	29	25
21:00	0	0	15	40	18	1	0	0	0	0	0	0	0	74	31	27
22:00	2	0	10	26	14	1	0	0	0	0	0	0	0	53	31	27
23:00	0	0	9	12	6	2	0	0	0	0	0	0	0	29	32	27
Total	34	114	745	1335	455	35	4	0	0	0	0	0	2	2724		
%	1.2%	4.2%	27.3%	49.0%	16.7%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	07:00	08:00	08:00	08:00	08:00	08:00	07:00							08:00		
Vol.	3	19	78	99	31	5	1							235		
PM Peak	12:00	18:00	17:00	16:00	15:00	17:00	17:00						16:00	16:00		
Vol.	4	11	57	136	55	5	2						1	249		

Stats

15th Percentile :	20 MPH
50th Percentile :	25 MPH
85th Percentile :	29 MPH
95th Percentile :	32 MPH
Mean Speed(Average) :	26 MPH
10 MPH Pace Speed :	20-29 MPH
Number in Pace :	2080
Percent in Pace :	76.4%
Number of Vehicles > 25 MPH :	1564
Percent of Vehicles > 25 MPH :	57.4%

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
 E/W/NW: Lowell St/ Westminster Ave  
 City, State: Arlington, MA  
 Client: BSC Group/ S. Offei-Addo



File Name : 165340 A  
 Site Code : TBA  
 Start Date : 10/20/2016  
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest							
Start Time	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Int. Total	
06:30 AM	0	0	68	4	0	0	0	0	1	12	1	0	0	2	0	6	2	0	1	5	19	2	11	0	63	9	3	1	0	0	0	7	3	1	0	0	221	
06:45 AM	0	0	94	3	0	0	0	0	0	25	1	0	1	1	2	6	3	0	2	6	27	4	17	0	71	13	2	3	0	0	1	10	3	1	0	0	296	
Total	0	0	162	7	0	0	0	0	1	37	2	0	1	3	2	12	5	0	3	11	46	6	28	0	134	22	5	4	0	0	1	17	6	2	0	0	517	
07:00 AM	1	2	100	2	0	0	0	0	2	24	3	0	0	3	1	10	7	0	2	10	39	2	19	0	87	16	1	1	1	0	0	14	4	1	1	0	353	
07:15 AM	2	1	116	1	0	0	1	1	2	19	1	0	2	10	2	13	0	0	3	6	32	7	20	0	73	20	3	1	0	0	0	23	11	2	0	0	372	
07:30 AM	1	1	101	1	0	0	2	2	0	51	7	0	2	0	4	6	0	0	2	14	39	8	29	0	80	10	5	2	3	0	1	23	13	0	0	0	407	
07:45 AM	3	0	79	2	0	0	0	1	3	33	7	0	3	2	5	9	6	0	3	11	46	13	38	0	79	17	3	0	0	0	0	27	7	0	1	0	398	
Total	7	4	396	6	0	0	3	4	7	127	18	0	7	15	12	38	13	0	10	41	156	30	106	0	319	63	12	4	4	0	1	87	35	3	2	0	1530	
08:00 AM	103																																					
08:15 AM	0	2	93	4	0	0	1	0	3	21	3	0	3	0	1	14	5	0	2	10	44	2	48	0	62	11	3	0	0	0	0	16	5	0	0	0	353	
08:30 AM	0	3	106	3	0	0	0	0	0	15	1	0	0	0	2	18	5	0	1	10	61	4	34	0	73	9	2	0	1	0	0	18	1	0	1	0	368	
08:45 AM	0	0	111	0	0	0	1	0	1	7	3	0	0	1	3	12	5	0	2	2	40	4	48	0	61	14	0	2	0	0	0	13	7	0	0	0	337	
Total	0	8	413	8	0	0	2	1	9	71	12	0	9	2	6	56	17	0	8	35	193	14	168	0	273	42	7	4	1	0	0	78	20	2	3	0	1462	
09:00 AM	118																																					
09:15 AM	0	1	90	3	0	0	0	0	2	4	1	0	0	0	1	12	5	0	5	2	55	3	25	0	72	9	0	0	1	0	0	16	2	0	0	0	309	
09:30 AM	2	1	72	4	0	0	0	0	0	9	2	0	0	2	2	13	2	0	10	0	51	1	23	0	53	14	1	2	0	0	0	14	0	0	0	0	278	
09:45 AM	1	1	57	0	0	0	0	0	0	5	0	0	1	5	0	11	5	0	6	4	56	3	25	0	56	16	0	1	0	0	0	7	1	0	3	0	264	
Total	3	4	337	9	0	0	0	0	3	20	6	0	2	7	6	51	13	0	28	7	197	10	103	0	268	53	3	3	1	0	0	52	4	0	4	0	1194	
10:00 AM																																						
10:15 AM	0	2	44	5	1	0	0	0	2	4	2	0	0	3	2	10	6	0	6	2	49	3	29	0	39	11	0	0	0	0	0	3	2	0	0	0	225	
10:30 AM	2	1	50	3	0	0	1	0	0	3	1	0	1	7	2	7	6	0	5	0	49	3	23	0	31	11	0	1	1	0	0	2	1	0	0	0	211	
10:45 AM	2	2	39	3	0	0	0	0	1	5	1	0	2	5	0	13	4	0	2	0	57	4	29	0	39	16	0	0	0	0	0	9	0	0	1	0	234	
Total	4	5	181	15	1	0	2	0	3	15	5	0	4	18	5	41	20	0	23	2	205	18	110	0	148	50	0	2	1	0	0	0	21	4	0	1	0	904
11:00 AM	1	1	53	1	0	0	0	1	0	4	0	0	1	2	2	11	3	1	5	4	45	2	20	0	28	9	0	1	0	0	0	2	4	0	1	0	202	
11:15 AM	1	1	35	0	0	0	0	0	0	3	1	0	2	4	2	11	3	0	5	0	64	3	27	0	34	20	0	0	0	0	0	4	4	0	1	0	225	
11:30 AM	0	2	34	4	0	0	0	0	0	4	2	0	1	7	3	12	3	0	7	1	56	5	26	0	29	12	0	1	0	0	0	6	0	0	2	0	217	
11:45 AM	0	3	61	3	0	0	0	0	1	6	2	0	0	6	4	9	6	0	5	2	48	3	32	0	34	16	0	1	1	0	0	2	3	0	3	0	251	
Total	2	7	183	8	0	0	0	1	1	17	5	0	4	19	11	43	15	1	22	7	213	13	105	0	125	57	0	3	1	0	0	14	11	0	7	0	895	
12:00 PM	4	0	48	0	0	0	1	0	1	4	2	0	1	6	4	8	7	0	8	4	52	6	33	0	31	9	0	2	1	0	0	5	4	0	1	0	242	
12:15 PM	1	1	52	0	0	0	0	3	1	4	2	0	2	3	4	11	2	0	2	1	78	5	24	0	30	9	0	0	1	0	0	3	3	0	0	0	242	

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
E/W/NW: Lowell St/ Westminster Ave  
City, State: Arlington, MA  
Client: BSC Group/ S. Offei-Addo



File Name : 165340 A  
Site Code : TBA  
Start Date : 10/20/2016  
Page No : 2

Groups Printed- Cars - Heavy Vehicles

Start Time	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest						Int. Total
	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	
12:30 PM	3	2	46	4	0	0	0	0	1	7	0	0	2	11	1	8	7	0	10	0	55	3	15	0	38	10	1	2	0	0	0	8	2	0	2	0	238
12:45 PM	0	2	47	3	0	0	0	0	0	5	3	0	1	7	5	12	3	0	8	0	80	7	23	0	42	9	0	1	1	0	0	4	4	0	0	0	267
Total	8	5	193	7	0	0	1	3	3	20	7	0	6	27	14	39	19	0	28	5	265	21	95	0	141	37	1	5	3	0	0	20	13	0	3	0	989
01:00 PM	0	1	41	6	0	0	0	0	0	3	2	0	3	6	2	12	4	0	3	1	58	1	23	0	31	8	1	3	0	0	0	3	1	0	1	0	214
01:15 PM	0	2	42	3	1	0	1	0	0	4	1	0	0	2	2	11	5	0	5	3	49	3	21	0	27	17	1	1	0	0	0	4	3	0	1	0	209
01:30 PM	1	0	45	1	0	0	1	0	0	3	1	0	0	5	5	11	1	0	11	2	52	3	33	0	26	14	0	0	1	0	0	3	2	0	1	0	222
01:45 PM	4	3	48	5	0	0	0	0	1	3	1	0	2	4	1	14	3	0	4	6	52	4	22	0	42	7	0	0	0	0	0	6	0	0	1	0	233
Total	5	6	176	15	1	0	2	0	1	13	5	0	5	17	10	48	13	0	23	12	211	11	99	0	126	46	2	4	1	0	0	16	6	0	4	0	878
02:00 PM	3	1	55	3	0	0	1	0	0	3	1	0	0	8	4	9	4	0	8	1	53	7	22	0	40	6	1	2	1	0	1	6	2	0	0	0	242
02:15 PM	0	1	31	1	0	0	0	0	2	4	2	0	4	13	3	6	4	0	5	1	66	5	21	0	50	15	2	0	1	0	0	4	2	2	4	0	249
02:30 PM	2	4	63	4	0	0	0	1	2	5	6	0	0	11	2	11	4	0	5	2	77	16	26	0	38	5	0	5	2	0	0	3	1	0	1	0	296
02:45 PM	2	1	66	6	0	0	2	1	0	3	4	0	0	8	9	11	4	0	7	0	94	13	40	0	50	14	0	0	1	0	0	9	3	0	1	0	349
Total	7	7	215	14	0	0	3	2	4	15	13	0	4	40	18	37	16	0	25	4	290	41	109	0	178	40	3	7	5	0	1	22	8	2	6	0	1136
03:00 PM																																					
03:15 PM	3	1	51	0	2	0	0	0	6	21	0	0	0	5	3	8	4	0	0	16	75	6	33	0	51	4	1	0	0	0	0	6	1	1	2	0	300
03:30 PM	2	3	46	6	0	0	1	1	4	15	1	0	3	4	0	9	2	0	5	19	88	8	32	0	54	9	2	0	0	0	0	6	0	1	0	0	321
03:45 PM	1	0	54	3	1	0	0	0	2	20	3	0	11	16	2	21	3	0	2	26	96	6	45	0	51	7	0	1	0	0	0	6	1	1	0	0	379
Total	8	8	206	11	3	0	2	1	14	73	6	0	14	36	6	50	13	0	14	79	347	26	148	0	190	25	5	1	1	0	0	22	2	3	2	0	1316
04:00 PM																																					
04:15 PM	0	3	49	8	0	0	1	1	3	7	4	0	1	12	2	11	2	0	1	23	93	9	40	0	52	16	0	0	0	0	0	4	3	1	0	0	346
04:30 PM	0	2	44	2	0	0	2	0	5	25	1	0	9	9	5	15	3	0	4	23	84	9	36	0	40	12	0	1	0	0	0	10	2	1	0	0	344
04:45 PM	1	1	57	5	1	0	0	1	1	19	3	0	5	15	0	16	5	0	8	25	99	12	39	0	32	14	3	1	0	0	0	2	2	3	0	0	370
Total	1	6	209	20	2	0	3	3	10	69	12	0	17	46	11	55	11	0	21	88	387	35	152	0	164	53	4	2	0	0	0	23	10	6	0	0	1420
05:00 PM																																					
05:15 PM	1	2	68	1	0	0	1	0	2	14	1	0	6	11	4	10	4	0	6	28	111	8	34	0	55	11	2	1	1	0	0	5	1	0	1	0	389
05:30 PM	6	1	53	1	0	0	0	0	3	15	2	0	8	7	6	14	4	0	6	18	100	6	44	0	53	22	2	0	0	0	0	8	6	0	0	0	385
05:45 PM	0	2	48	0	0	0	0	1	7	15	3	0	1	10	7	13	3	0	5	22	114	7	35	0	37	11	2	2	0	0	0	9	4	1	0	0	359
Total	9	10	227	4	0	0	2	2	14	58	9	0	19	43	22	50	15	0	23	92	423	28	164	0	198	62	8	5	1	0	0	28	11	3	1	0	1531
06:00 PM																																					
06:15 PM	0	1	44	3	0	0	0	2	0	14	3	0	5	4	3	11	3	0	7	30	108	8	33	0	50	13	3	0	0	0	0	5	0	3	0	0	353
Grand Total	55	71	3007	129	7	0	20	19	74	570	104	0	106	290	130	547	173	1	240	432	3140	270	1460	1	2367	582	56	45	22	0	3	408	135	24	33	0	14521
Apprch %	1.7	2.2	92	3.9	0.2	0	2.5	2.4	9.4	72.4	13.2	0	8.5	23.3	10.4	43.9	13.9	0.1	4.3	7.8	56.6	4.9	26.3	0	77.1	18.9	1.8	1.5	0.7	0	0.5	67.7	22.4	4	5.5	0	
Total %	0.4	0.5	20.7	0.9	0	0	0.1	0.1	0.5	3.9	0.7	0	0.7	2	0.9	3.8	1.2	0	1.7	3	21.6	1.9	10.1	0	16.3	4	0.4	0.3	0.2	0	0	2.8	0.9	0.2	0.2	0	
Cars	54	67	2933	125	7	0	19	19	71	559	101	0	102	277	128	526	171	1	228	422	3055	265	1439	1	2296	562	50	45	21	0	3	399	131	23	33	0	14133
% Cars	98.2	94.4	97.5	96.9	100	0	95	100	95.9	98.1	97.1	0	96.2	95.5	98.5	96.2	98.8	100	95	97.7	97.3	98.1	98.6	100	97	96.6	89.3	100	95.5	0	100	97.8	97	95.8	100	0	97.3
Heavy Vehicles																																					
% Heavy Vehicles	1.8	5.6	2.5	3.1	0	0	5	0	4.1	1.9	2.9	0	3.8	4.5	1.5	3.8	1.2	0	5	2.3	2.7	1.9	1.4	0	3	3.4	10.7	0	4.5	0	0	2.2	3	4.2	0	0	2.7





N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
 E/W/NW: Lowell St/ Westminster Ave  
 City, State: Arlington, MA  
 Client: BSC Group/ S. Offei-Addo



File Name : 165340 A  
 Site Code : TBA  
 Start Date : 10/20/2016  
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Groups Printed- Cars																																						
	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest							
Start Time	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Int. Total	
06:30 AM	0	0	67	4	0	0	0	0	1	12	1	0	0	2	0	6	2	0	1	5	17	2	11	0	60	9	3	1	0	0	0	7	3	1	0	0	215	
06:45 AM	0	0	93	3	0	0	0	0	0	24	1	0	1	1	2	4	3	0	2	5	27	4	16	0	69	12	1	3	0	0	1	10	3	1	0	0	286	
Total	0	0	160	7	0	0	0	0	1	36	2	0	1	3	2	10	5	0	3	10	44	6	27	0	129	21	4	4	0	0	1	17	6	2	0	0	501	
07:00 AM	1	2	98	1	0	0	0	0	2	23	3	0	0	3	1	9	7	0	2	9	37	2	19	0	82	16	1	1	1	0	0	14	4	1	1	0	340	
07:15 AM	2	1	113	1	0	0	1	1	2	19	1	0	2	9	2	12	0	0	2	5	31	7	20	0	73	20	3	1	0	0	0	23	11	2	0	0	364	
07:30 AM	1	1	99	1	0	0	2	2	0	51	7	0	2	0	4	6	0	0	2	13	37	8	29	0	76	9	5	2	3	0	1	23	13	0	0	0	397	
07:45 AM	3	0	79	2	0	0	0	1	3	33	7	0	3	2	5	9	6	0	3	11	46	12	38	0	78	16	3	0	0	0	0	27	7	0	1	0	395	
Total	7	4	389	5	0	0	3	4	7	126	18	0	7	14	12	36	13	0	9	38	151	29	106	0	309	61	12	4	4	0	1	87	35	3	2	0	1496	
08:00 AM	102																																					
08:15 AM	0	2	93	4	0	0	1	0	2	19	3	0	1	0	1	14	5	0	2	10	38	2	48	0	61	11	2	0	0	0	0	16	5	0	0	0	340	
08:30 AM	0	2	104	3	0	0	0	0	0	15	1	0	0	0	2	18	5	0	1	9	58	4	33	0	71	9	2	0	0	0	0	17	1	0	1	0	356	
08:45 AM	0	0	107	0	0	0	1	0	1	7	3	0	0	1	3	11	4	0	2	2	39	4	48	0	59	12	0	2	0	0	0	13	6	0	0	0	325	
Total	0	7	406	8	0	0	2	1	8	69	12	0	7	2	6	55	16	0	8	34	182	14	166	0	263	40	6	4	0	0	0	76	19	2	3	0	1416	
09:00 AM	116																																					
09:15 AM	0	1	86	2	0	0	0	0	2	4	1	0	0	0	1	12	5	0	5	2	54	3	25	0	71	9	0	0	1	0	0	16	2	0	0	0	302	
09:30 AM	2	1	71	4	0	0	0	0	0	9	2	0	0	2	2	12	2	0	6	0	48	1	22	0	51	13	1	2	0	0	0	14	0	0	0	0	265	
09:45 AM	1	1	53	0	0	0	0	0	0	5	0	0	1	4	0	11	5	0	6	4	51	3	24	0	55	16	0	1	0	0	0	7	1	0	3	0	252	
Total	3	4	326	8	0	0	0	0	3	20	6	0	2	6	6	50	13	0	24	7	187	10	100	0	255	51	2	3	1	0	0	52	4	0	4	0	1147	
10:00 AM	116																																					
10:15 AM	0	2	41	5	1	0	0	0	1	4	2	0	0	3	2	10	6	0	5	2	47	2	28	0	37	10	0	0	0	0	0	3	1	0	0	0	212	
10:30 AM	2	1	49	3	0	0	1	0	0	3	1	0	1	7	2	7	6	0	5	0	49	3	23	0	29	10	0	1	1	0	0	2	1	0	0	0	207	
10:45 AM	2	2	37	3	0	0	0	0	1	4	1	0	1	4	0	13	4	0	2	0	52	4	29	0	39	14	0	0	0	0	0	9	0	0	1	0	222	
Total	4	5	175	15	1	0	2	0	2	13	5	0	3	17	5	39	19	0	22	2	196	16	108	0	144	46	0	2	1	0	0	0	21	3	0	1	0	867
11:00 AM	1	1	51	1	0	0	0	1	0	4	0	0	1	2	2	9	3	1	5	3	44	2	18	0	28	9	0	1	0	0	0	2	4	0	1	0	194	
11:15 AM	1	1	34	0	0	0	0	0	0	3	1	0	2	3	2	11	3	0	5	0	62	3	26	0	32	20	0	0	0	0	0	4	4	0	1	0	218	
11:30 AM	0	1	30	3	0	0	0	0	0	4	2	0	1	6	3	12	3	0	7	1	55	5	26	0	28	11	0	1	0	0	0	5	0	0	2	0	206	
11:45 AM	0	3	58	3	0	0	0	0	1	5	2	0	0	6	4	8	6	0	5	2	47	2	32	0	34	16	0	1	1	0	0	2	3	0	3	0	244	
Total	2	6	173	7	0	0	0	1	1	16	5	0	4	17	11	40	15	1	22	6	208	12	102	0	122	56	0	3	1	0	0	13	11	0	7	0	862	
12:00 PM	4	0	45	0	0	0	1	0	1	4	2	0	1	6	4	8	7	0	8	4	51	6	33	0	29	8	0	2	1	0	0	4	4	0	1	0	234	
12:15 PM	1	1	51	0	0	0	0	3	1	4	2	0	2	3	4	11	2	0	2	1	77	5	22	0	30	9	0	0	1	0	0	2	3	0	0	0	237	

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
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 City, State: Arlington, MA  
 Client: BSC Group/ S. Offei-Addo



File Name : 165340 A  
 Site Code : TBA  
 Start Date : 10/20/2016  
 Page No : 2

Groups Printed- Cars

	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest						
Start Time	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Int. Total
12:30 PM	3	2	46	4	0	0	0	0	1	7	0	0	2	9	1	8	7	0	9	0	55	3	15	0	38	10	0	2	0	0	0	8	2	0	2	0	234
12:45 PM	0	1	45	3	0	0	0	0	0	5	3	0	1	6	5	10	3	0	7	0	75	7	23	0	40	8	0	1	1	0	0	3	4	0	0	0	251
Total	8	4	187	7	0	0	1	3	3	20	7	0	6	24	14	37	19	0	26	5	258	21	93	0	137	35	0	5	3	0	0	17	13	0	3	0	956
01:00 PM	0	1	39	6	0	0	0	0	0	3	2	0	3	6	2	12	4	0	3	1	55	1	22	0	28	8	1	3	0	0	0	3	1	0	1	0	205
01:15 PM	0	2	39	3	1	0	1	0	0	4	1	0	0	2	2	10	5	0	5	3	48	3	20	0	26	16	1	1	0	0	0	4	3	0	1	0	201
01:30 PM	1	0	44	1	0	0	0	0	0	3	1	0	0	5	5	9	1	0	11	2	48	3	31	0	26	14	0	0	1	0	0	3	2	0	1	0	212
01:45 PM	3	3	47	5	0	0	0	0	1	3	0	0	1	4	1	14	3	0	3	6	52	4	21	0	40	7	0	0	0	0	0	6	0	0	1	0	225
Total	4	6	169	15	1	0	1	0	1	13	4	0	4	17	10	45	13	0	22	12	203	11	94	0	120	45	2	4	1	0	0	16	6	0	4	0	843
02:00 PM	3	1	53	3	0	0	1	0	0	3	1	0	0	7	4	9	4	0	8	0	51	7	22	0	40	4	1	2	1	0	1	6	2	0	0	0	234
02:15 PM	0	0	28	1	0	0	0	0	1	4	1	0	4	13	3	5	4	0	5	1	63	4	21	0	50	15	2	0	1	0	0	3	2	1	4	0	236
02:30 PM	2	4	62	3	0	0	0	1	2	4	5	0	0	10	2	9	4	0	5	2	72	16	24	0	35	5	0	5	2	0	0	2	1	0	1	0	278
02:45 PM	2	1	65	6	0	0	2	1	0	3	4	0	0	8	8	11	4	0	7	0	90	13	40	0	49	14	0	0	1	0	0	9	3	0	1	0	342
Total	7	6	208	13	0	0	3	2	3	14	11	0	4	38	17	34	16	0	25	3	276	40	107	0	174	38	3	7	5	0	1	20	8	1	6	0	1090
03:00 PM																																					
03:15 PM	3	1	51	0	2	0	0	0	6	20	0	0	0	5	3	8	4	0	0	16	75	6	32	0	51	3	1	0	0	0	0	6	0	1	2	0	296
03:30 PM	2	3	45	6	0	0	1	1	4	15	1	0	3	4	0	9	2	0	5	19	86	8	32	0	54	9	1	0	0	0	0	6	0	1	0	0	317
03:45 PM	1	0	53	3	1	0	0	0	2	20	3	0	11	15	2	21	3	0	2	26	94	6	45	0	50	6	0	1	0	0	0	6	1	1	0	0	373
Total	8	8	204	11	3	0	2	1	14	70	6	0	14	34	6	50	13	0	14	78	341	26	147	0	188	23	4	1	1	0	0	22	1	3	2	0	1295
04:00 PM																				108																	
04:15 PM	0	3	47	8	0	0	1	1	3	7	4	0	1	12	2	11	2	0	1	22	91	9	40	0	50	16	0	0	0	0	0	4	3	1	0	0	339
04:30 PM	0	2	41	2	0	0	2	0	5	25	1	0	9	9	4	15	3	0	4	23	83	9	36	0	39	12	0	1	0	0	0	9	2	1	0	0	337
04:45 PM	1	1	57	5	1	0	0	1	1	19	3	0	5	14	0	16	5	0	8	25	99	12	39	0	32	14	2	1	0	0	0	2	2	3	0	0	368
Total	1	6	204	20	2	0	3	3	10	69	12	0	17	45	10	55	11	0	20	86	381	35	152	0	159	53	3	2	0	0	0	22	9	6	0	0	1396
05:00 PM																																					
05:15 PM	1	2	68	1	0	0	1	0	2	14	1	0	6	11	4	10	4	0	6	28	110	8	34	0	55	11	2	1	1	0	0	5	1	0	1	0	388
05:30 PM	6	1	53	1	0	0	0	0	3	15	2	0	8	7	6	12	4	0	5	18	99	6	44	0	52	22	2	0	0	0	0	8	6	0	0	0	380
05:45 PM	0	2	45	0	0	0	0	1	7	15	3	0	1	10	7	13	3	0	5	22	114	7	35	0	37	11	2	2	0	0	0	9	4	1	0	0	356
Total	9	10	224	4	0	0	2	2	14	58	9	0	19	43	22	48	15	0	22	92	421	28	164	0	195	61	8	5	1	0	0	28	11	3	1	0	1519
06:00 PM																																					
06:15 PM	0	1	44	3	0	0	0	2	0	14	3	0	5	4	3	11	3	0	7	30	108	8	33	0	49	13	3	0	0	0	0	5	0	3	0	0	352
Grand Total	54	67	2933	125	7	0	19	19	71	559	101	0	102	277	128	526	171	1	228	422	3055	265	1439	1	2296	562	50	45	21	0	3	399	131	23	33	0	14133
Apprch %	1.7	2.1	92.1	3.9	0.2	0	2.5	2.5	9.2	72.7	13.1	0	8.5	23	10.6	43.7	14.2	0.1	4.2	7.8	56.5	4.9	26.6	0	77.2	18.9	1.7	1.5	0.7	0	0.5	67.7	22.2	3.9	5.6	0	
Total %	0.4	0.5	20.8	0.9	0	0	0.1	0.1	0.5	4	0.7	0	0.7	2	0.9	3.7	1.2	0	1.6	3	21.6	1.9	10.2	0	16.2	4	0.4	0.3	0.1	0	0	2.8	0.9	0.2	0.2	0	



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
E/W/NW: Lowell St/ Westminster Ave  
City, State: Arlington, MA  
Client: BSC Group/ S. Oftei-Addo

File Name : 165340 A  
Site Code : TBA  
Start Date : 10/20/2016  
Page No : 3

	Park Avenue Extension From North							Bow Street From Northeast							Lowell Street From East							Park Avenue From South							Lowell Street From West							Westminster Avenue From Northwest									
Start Time	Hard Right	Right	Thru	Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Thru	Left	U- Turn	App. Total	Right	Bear Right	Thru	Bear Left	Left	U- Turn	App. Total	Right	Thru	Bear Left	Left	Hard Left	U- Turn	App. Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U- Turn	App. Total	Int. Total		
Peak Hour Analysis From 06:30 AM to 12:30 PM - Peak 1 of 1																																													
Peak Hour for Entire Intersection Begins at 07:15 AM																																													
07:15 AM	2	1	113	1	0	0	117	1	1	2	19	1	0	24	2	9	2	12	0	0	25	2	5	31	7	20	0	65	73	20	3	1	0	0	97	0	23	11	2	0	0	36	364		
07:30 AM	1	1	99	1	0	0	102	2	2	0	51	7	0	62	2	0	4	6	0	0	12	2	13	37	8	29	0	89	76	9	5	2	3	0	95	1	23	13	0	0	0	37	397		
07:45 AM	3	0	79	2	0	0	84	0	1	3	33	7	0	44	3	2	5	9	6	0	25	3	11	46	12	38	0	110	78	16	3	0	0	0	97	0	27	7	0	1	0	35	395		
08:00 AM	0	3	102	1	0	0	106	0	1	5	28	5	0	39	6	1	0	12	2	0	21	3	13	47	4	37	0	104	72	8	2	2	0	0	84	0	30	7	2	2	0	41	395		
Total Volume	6	5	393	5	0	0	409	3	5	10	131	20	0	169	13	12	11	39	8	0	83	10	42	161	31	124	0	368	299	53	13	5	3	0	373	1	103	38	4	3	0	149	1551		
% App. Total	1.5	1.2	96.1	1.2	0	0		1.8	3	5.9	77.5	11.8	0		15.7	14.5	13.3	47	9.6	0		2.7	11.4	43.8	8.4	33.7	0		80.2	14.2	3.5	1.3	0.8	0		0.7	69.1	25.5	2.7	2	0				
PHF	.500	.417	.869	.625	.000	.000	.874	.375	.625	.500	.642	.714	.000	.681	.542	.333	.550	.813	.333	.000	.830	.833	.808	.856	.646	.816	.000	.836	.958	.663	.650	.625	.250	.000	.961	.250	.858	.731	.500	.375	.000	.909	.977		

Peak Hour Analysis From 12:45 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	1	1	57	5	1	0	65	0	1	1	19	3	0	24	5	14	0	16	5	0	40	8	25	99	12	39	0	183	32	14	2	1	0	0	49	0	2	2	3	0	0	7	368
05:00 PM	2	5	58	2	0	0	67	1	1	2	14	3	0	21	4	15	5	13	4	0	41	6	24	98	7	51	0	186	51	17	2	2	0	0	72	0	6	0	2	0	0	8	395
05:15 PM	1	2	68	1	0	0	72	1	0	2	14	1	0	18	6	11	4	10	4	0	35	6	28	110	8	34	0	186	55	11	2	1	1	0	70	0	5	1	0	1	0	7	388
05:30 PM	6	1	53	1	0	0	61	0	0	3	15	2	0	20	8	7	6	12	4	0	37	5	18	99	6	44	0	172	52	22	2	0	0	0	76	0	8	6	0	0	0	14	380
Total Volume	10	9	236	9	1	0	265	2	2	8	62	9	0	83	23	47	15	51	17	0	153	25	95	406	33	168	0	727	190	64	8	4	1	0	267	0	21	9	5	1	0	36	1531
% App. Total	3.8	3.4	89.1	3.4	0.4	0		2.4	2.4	9.6	74.7	10.8	0		15	30.7	9.8	33.3	11.1	0		3.4	13.1	55.8	4.5	23.1	0		71.2	24	3	1.5	0.4	0		0	58.3	25	13.9	2.8	0		
PHF	.417	.450	.868	.450	.250	.000	.920	.500	.500	.667	.816	.750	.000	.865	.719	.783	.625	.797	.850	.000	.933	.781	.848	.923	.688	.824	.000	.977	.864	.727	1.00	.500	.250	.000	.878	.000	.656	.375	.417	.250	.000	.643	.969



N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
E/W/NW: Lowell St/ Westminster Ave  
City, State: Arlington, MA  
Client: BSC Group/ S. Offei-Addo

File Name : 165340 A  
Site Code : TBA  
Start Date : 10/20/2016  
Page No : 1

Start Time	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest						Int. Total	
	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn		
06:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6
06:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	2	1	1	0	0	0	0	0	0	0	0	10	
Total	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	1	2	0	1	0	5	1	1	0	0	0	0	0	0	0	0	16	
07:00 AM	0	0	2	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	13	
07:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8		
07:30 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	4	1	0	0	0	0	0	0	0	0	10		
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3		
Total	0	0	7	1	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	1	3	5	1	0	0	10	2	0	0	0	0	0	0	0	0	34		
08:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	5	0	0	0	0	0	0	0	0	0	9		
08:15 AM	0	0	0	0	0	0	0	0	1	2	0	0	2	0	0	0	0	0	0	0	6	0	0	0	0	1	0	1	0	0	0	0	0	0	0	13		
08:30 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	1	0	2	0	0	0	0	1	0	0	1	0	0	12		
08:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	12		
Total	0	1	7	0	0	0	0	0	1	2	0	0	2	0	0	1	1	0	0	1	11	0	2	0	10	2	1	0	1	0	0	0	0	0	0	46		
09:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	9	1	1	0	0	0	0	0	0	0	15			
09:15 AM	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	7			
09:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	3	0	1	0	2	1	0	0	0	0	0	0	0	0	13			
09:45 AM	0	0	4</																																			



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
E/W/NW: Lowell St/ Westminster Ave  
City, State: Arlington, MA  
Client: BSC Group/ S. Offei-Addo

File Name : 165340 A  
Site Code : TBA  
Start Date : 10/20/2016  
Page No : 2

Groups Printed- Heavy Vehicles

	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest						
Start Time	Hard Right	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Bear Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Bear Left	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Left	Hard Left	U-Turn	Int. Total
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4
12:45 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	1	0	5	0	0	0	0	2	1	0	0	0	0	0	1	0	0	0	16
Total	0	1	6	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	2	0	7	0	2	0	0	4	2	1	0	0	0	0	3	0	0	0	33
01:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	3	0	0	0	0	0	0	0	0	0	9	
01:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	8	
01:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	10	
01:45 PM	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	8
Total	1	0	7	0	0	0	1	0	0	0	1	0	1	0	0	3	0	0	1	0	8	0	5	0	0	6	1	0	0	0	0	0	0	0	0	35	
02:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	8	
02:15 PM	0	1	3	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	13	
02:30 PM	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	2	0	0	0	0	5	0	2	0	0	3	0	0	0	0	0	0	1	0	0	0	18
02:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	7	
Total	0	1	7	1	0	0	0	0	1	1	2	0	0	2	1	3	0	0	0	1	14	1	2	0	0	4	2	0	0	0	0	0	2	0	1	0	46
03:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	7	
03:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	4	
03:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	
03:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	6	
Total	0	0	2	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	1	6	0	1	0	0	2	2	1	0	0	0	0	0	1	0	0	21
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	2	0	0	0	0	0	0	1	0	0	8	
04:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	7	
04:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	7	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	
Total	0	0	5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	2	6	0	0	0	0	5	0	1	0	0	0	0	1	1	0	0	24
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3	
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	
05:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Total	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	2	0	0	0	0	3	1	0	0	0	0	0	0	0	0	12	
06:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
Grand Total	1	4	74	4	0	0	1	0	3	11	3	0	4	13	2	21	2	0	12	10	85	5	21	0	0	71	20	6	0	1	0	0	9	4	1	0	388
Apprch %	1.2	4.8	89.2	4.8	0	0	5.6	0	16.7	61.1	16.7	0	9.5	31	4.8	50	4.8	0	9	7.5	63.9	3.8	15.8	0	72.4	20.4	6.1	0	1	0	0	64.3	28.6	7.1	0	0	
Total %	0.3	1	19.1	1	0	0	0.3	0	0.8	2.8	0.8	0	1	3.4	0.5	5.4	0.5	0	3.1	2.6	21.9	1.3	5.4	0	18.3	5.2	1.5	0	0.3	0	0	2.3	1	0.3	0	0	



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
E/W/NW: Lowell St/ Westminster Ave  
City, State: Arlington, MA  
Client: BSC Group/ S. Oftei-Addo

File Name : 165340 A  
Site Code : TBA  
Start Date : 10/20/2016  
Page No : 3

	Park Avenue Extension From North							Bow Street From Northeast							Lowell Street From East							Park Avenue From South							Lowell Street From West							Westminster Avenue From Northwest									
Start Time	Hard Right	Right	Thru	Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Thru	Left	U- Turn	App. Total	Right	Bear Right	Thru	Bear Left	Left	U- Turn	App. Total	Right	Thru	Bear Left	Left	Hard Left	U- Turn	App. Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U- Turn	App. Total	Int. Total		
Peak Hour Analysis From 06:30 AM to 12:30 PM - Peak 1 of 1																																													
Peak Hour for Entire Intersection Begins at 08:15 AM																																													
08:15 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	3	2	0	0	0	0	0	2	0	0	6	0	0	0	6	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	13
08:30 AM	0	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	1	0	5	2	0	0	0	1	0	3	0	1	0	0	0	0	1	12		
08:45 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	1	0	0	1	2	2	0	0	0	0	4	0	0	1	0	0	0	1	12			
09:00 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	9	1	1	0	0	0	11	0	0	0	0	0	0	0	15		
Total Volume	0	1	8	0	0	0	9	0	0	1	2	0	0	3	2	0	0	1	1	0	4	0	1	11	0	2	0	14	14	3	2	0	1	0	20	0	1	1	0	0	0	2	52		
% App.Total	0	11.1	88.9		0	0	0	0	0	33.3	66.7		0	0	50	0	0	25	25	0		0	7.1	78.6	0	14.3	0		70	15	10	0	5	0		0	50	50	0	0	0				
PHF	.000	.250	.500	.000	.000	.000	.563	.000	.000	.250	.250	.000	.000	.250	.250	.000	.000	.250	.250	.000	.500	.000	.250	.458	.000	.500	.000	.583	.389	.375	.500	.000	.250	.000	.455	.000	.250	.250	.000	.000	.000	.500		.867	

Peak Hour Analysis From 12:45 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 01:45 PM

01:45 PM	1	0	1	0	0	0	2	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	1	0	2	2	0	0	0	0	0	2	0	0	0	0	0	0	8	
02:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	3	0	2	0	0	0	0	2	0	0	0	0	0	0	8	
02:15 PM	0	1	3	0	0	0	4	0	0	1	0	1	0	2	0	0	0	0	1	0	0	1	0	0	3	1	0	0	4	0	0	0	0	0	0	0	0	1	0	1	0	0	2	13
02:30 PM	0	0	1	1	0	0	2	0	0	0	1	1	0	2	0	1	0	2	0	0	3	0	0	5	0	2	0	7	3	0	0	0	0	0	3	0	1	0	0	0	0	1	18	
Total Volume	1	1	7	1	0	0	10	0	0	1	1	3	0	5	1	2	0	3	0	0	6	1	1	10	1	3	0	16	5	2	0	0	0	0	7	0	2	0	1	0	0	3	47	
% App. Total	10	10	70	10	0	0		0	0	20	20	60	0		16.7	33.3	0	50	0	0		6.2	6.2	62.5	6.2	18.8	0		71.4	28.6	0	0	0	0		0	66.7	0	33.3	0	0			
PHF	.250	.250	.583	.250	.000	.000	.625	.000	.000	.250	.250	.750	.000	.625	.250	.500	.000	.375	.000	.000	.500	.250	.250	.500	.250	.375	.000	.571	.417	.250	.000	.000	.000	.000	.583	.000	.500	.000	.250	.000	.000	.375		.653

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
 E/W/NW: Lowell St/ Westminster Ave  
 City, State: Arlington, MA  
 Client: BSC Group/ S. Offei-Addo



File Name : 165340 A  
 Site Code : TBA  
 Start Date : 10/20/2016  
 Page No : 1

Groups Printed- Peds and Bicycles																																													
	Park Avenue Extension From North							Bow Street From Northeast							Lowell Street From East							Park Avenue From South							Lowell Street From West							Westminster Avenue From Northwest									
Start Time	Hard Right	Right	Thru	Left	Hard Left	Peds EB	Peds WB	Hard Right	Right	Bear Right	Bear Left	Hard Left	Peds EB	Peds WB	Hard Right	Right	Bear Right	Thru	Left	Peds SB	Peds NB	Right	Bear Right	Thru	Bear Left	Left	Peds WB	Peds EB	Right	Thru	Bear Left	Left	Hard Left	Peds NB	Peds SB	Hard Right	Bear Right	Bear Left	Left	Hard Left	Peds NB	Peds SB	Int. Total		
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
06:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3	1	0	0	0	0	2	0	0	0	0	0	0	0	0	9	
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	3	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	12	
07:00 AM	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	4	1	0	0	0	0	0	0	0	7	0	0	0	0	0	0	4	23		
07:15 AM	0	0	0	0	0	7	3	0	0	0	0	0	6	1	0	0	0	0	0	2	6	0	0	0	0	0	2	4	0	0	0	0	0	3	7	0	0	0	0	0	1	5	47		
07:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	3	1	0	0	0	0	0	3	1	0	0	0	0	0	2	1	0	0	0	0	0	1	6	0	0	0	0	0	10	6	37		
07:45 AM	0	0	0	0	0	16	0	0	0	0	0	0	3	2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	12	9	0	0	0	0	0	3	6	54			
Total	0	0	0	0	0	27	5	0	0	0	0	0	13	4	0	0	0	0	0	9	7	0	0	0	0	0	9	6	0	1	0	0	0	16	29	0	0	0	0	0	14	21	161		
08:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	7			
08:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	4	1	0	0	1	0	0	0	8	0	0	2	1	0	0	9	31		
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	3	0	0	0	0	0	1	3	0	0	0	0	0	1	1	16		
08:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	10	4	0	0	0	0	0	4	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	25		
Total	0	1	1	0	0	1	3	0	0	2	0	0	0	2	0	0	0	1	0	14	6	0	0	1	0	0	9	5	0	0	2	0	0	1	14	0	0	2	1	0	1	12	79		
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	11			
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	2	2	0	0	0	0	0	3	1	13			
09:30 AM	0	0	0	0	0	2	2	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	1	0	0	0	1	0	0	0	0	0	3	3	0	0	0	0	0	2	1	21		
09:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6		
Total	0	0	0	0	0	2	3	0	0	0	0	0	5	6	0	0	0	0	0	6	1	0	0	1	0	0	3	2	0	0	0	0	0	5	8	0	0	0	0	0	5	4	51		
10:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	4	2	0	0	0	0	0	1	2	18		
10:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	3	1	0	0	0	0	0	2	1	0	0	0	0	0	1	4	0	0	0	0	0	1	1	0	0	0	0	0	1	1	18		
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	5		
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	5		
Total	0	0	0	0	0	4	1	0	0	0	0	0	5	2	0	0	0	0	0	3	1	0	0	0	0	0	4	6	0	0	1	0	0	6	5	0	0	0	0	0	2	6	46		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5		
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	2	2	13			
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	3	2	0	0	1	0	0	1	1	13			
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3	0	0	0	0	0	2	0	9				
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	5	2	0	1	0	0	0	9	5	0	0	1	0	0	5	3	40			
12:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	6	14			
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1	0	0	0	0	0	6	0	11				



N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
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File Name : 165340 A  
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 Start Date : 10/20/2016  
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Groups Printed- Peds and Bicycles																																											
	Park Avenue Extension From North							Bow Street From Northeast							Lowell Street From East							Park Avenue From South							Lowell Street From West							Westminster Avenue From Northwest							
Start Time	Hard Right	Right	Thru	Left	Hard Left	Peds EB	Peds WB	Hard Right	Right	Bear Right	Bear Left	Hard Left	Peds EB	Peds WB	Hard Right	Right	Bear Right	Thru	Left	Peds SB	Peds NB	Right	Bear Right	Thru	Bear Left	Left	Peds WB	Peds EB	Right	Thru	Bear Left	Left	Hard Left	Peds NB	Peds SB	Hard Right	Bear Right	Bear Left	Left	Hard Left	Peds NB	Peds SB	Int. Total
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	1	0	1	0	0	0	1	6	0	0	0	0	0	1	6	21
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2	2	9
Total	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	3	2	0	0	0	1	0	4	4	0	1	0	0	0	4	10	0	0	0	0	0	9	14	55
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	6	
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	4	1	0	0	0	0	4	1	15	
01:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4	
01:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	9	
Total	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	2	4	0	0	0	0	0	2	1	0	0	0	0	6	4	0	0	0	0	0	5	5	34	
02:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	9		
02:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3	0	0	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	2	0	13	
02:30 PM	0	0	0	0	0	1	2	0	2	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	2	3	21	
02:45 PM	0	0	0	0	0	2	2	0	0	0	0	0	3	5	0	0	1	0	0	5	5	0	0	0	0	0	5	3	0	0	0	0	0	6	7	0	0	0	0	0	7	8	59
Total	0	0	0	0	0	7	4	0	2	0	0	0	4	13	0	0	1	0	0	7	9	0	0	0	0	0	6	6	0	0	0	0	0	10	9	0	0	0	0	0	13	11	102
03:00 PM	0	0	0	0	0	0	6	0	0	0	0	0	1	4	0	0	0	0	0	4	2	0	0	0	0	0	6	1	0	0	1	0	0	4	7	0	0	0	0	0	1	7	44
03:15 PM	0	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	3	6	0	0	0	0	0	2	5	25
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	0	2	6	27
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	1	1	10	
Total	0	0	0	0	0	0	10	0	0	0	0	0	6	13	0	0	0	0	0	5	3	1	0	0	0	0	6	1	1	0	1	0	0	13	21	0	0	0	0	0	6	19	106
04:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	2	5	14	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	2	0	9	
04:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	2	3	0	0	0	0	0	0	2	0	0	0	0	1	3	5	0	0	0	0	0	0	5	0	0	0	0	0	0	4	27
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	1	0	0	4	6	0	0	0	0	0	1	3	0	0	0	0	1	2	0	0	0	0	0	1	1	25	
Total	0	0	0	0	0	1	2	0	0	0	0	0	2	9	0	0	1	0	0	4	8	0	0	0	0	1	4	8	0	0	0	0	0	6	14	0	0	0	0	0	5	10	75
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2	2	0	0	0	0	0	6	0	0	0	0	0	5	0	18	
05:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	2	2	0	0	0	0	0	2	1	0	0	0	0	0	3	15	
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	4	0	0	0	0	0	6	0	0	0	1	0	0	3	0	19	
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	8	
Total	0	0	0	0	0	2	1	0	0	0	0	0	1	1	0	1	0	0	0	5	6	0	0	0	0	0	8	4	0	0	0	0	0	15	2	0	0	1	0	0	9	4	60
06:00 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	3	0	0	0	2	0	0	5	0	0	0	0	0	5	0	21	
06:15 PM	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	3	0	0	2	0	0	2	0	0	1	0	0	0	9	0	0	0	0	0	5	1	27	
Grand Total	0	1	3	0	0	50	31	0	2	4	0	0	38	53	0	1	2	1	0	60	61	1	0	4	1	1	66	51	2	4	4	0	0	107	122	0	0	4	1	0	84	110	869
Apprch %	0	1.2	3.5	0	0	58.8	36.5	0	2.1	4.1	0	0	39.2	54.6	0	0.8	1.6	0.8	0	48	48.8	0.8	0	3.2	0.8	0.8	53.2	41.1	0.8	1.7	1.7	0	0	44.8	51	0	0	2	0.5	0	42.2	55.3	
Total %	0	0.1	0.3	0	0	5.8	3.6	0	0.2	0.5	0	0	4.4	6.1	0	0.1	0.2	0.1	0	6.9	7	0.1	0	0.5	0.1	0.1	7.6	5.9	0.2	0.5	0.5	0	0	12.3	14	0	0	0.5	0.1	0	9.7	12.7	



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
E/W/NW: Lowell St/ Westminster Ave  
City, State: Arlington, MA  
Client: BSC Group/ S. Offei-Addo

File Name : 165340 A  
Site Code : TBA  
Start Date : 10/20/2016  
Page No : 3

	Park Avenue Extension From North							Bow Street From Northeast							Lowell Street From East							Park Avenue From South							Lowell Street From West							Westminster Avenue From Northwest													
Start Time	Har d Ri ght	Rig ht	Thr u	Left	Har d Le ft	Ped s E B	Ped s W B	App. Total	Har d Ri ght	Rig ht	Bea r Ri ght	Bea r Lef t	Har d Le ft	Ped s E B	Ped s W B	App. Total	Har d Ri ght	Rig ht	Bea r Ri ght	Thr u	Left	Ped s S B	Ped s N B	App. Total	Rig ht	Bea r Ri ght	Thr u	Bea r Lef t	Left	Ped s W B	Ped s E B	App. Total	Rig ht	Thr u	Bea r Lef t	Left	Har d Le ft	Ped s N B	Ped s S B	App. Total	Har d Ri ght	Bea r Ri ght	Bea r Lef t	Left	Har d Le ft	Ped s N B	Ped s S B	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 12:30 PM - Peak 1 of 1																																																	
Peak Hour for Entire Intersection Begins at 07:00 AM																																																	
07:00 AM	0	0	0	0	0	1	2	3	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	0	0	4	1	5	0	0	0	0	0	0	7	7	0	0	0	0	0	4	4	23
07:15 AM	0	0	0	0	0	7	3	10	0	0	0	0	0	6	1	7	0	0	0	0	0	2	6	8	0	0	0	0	0	2	4	6	0	0	0	0	0	3	7	10	0	0	0	0	1	5	6	47	
07:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	3	1	4	0	0	0	0	0	3	1	4	0	0	0	0	0	2	1	3	0	0	0	0	0	1	6	7	0	0	0	0	10	6	16	37	
07:45 AM	0	0	0	0	0	16	0	16	0	0	0	0	0	3	2	5	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	12	9	22	0	0	0	0	3	6	9	54	
Total Volume	0	0	0	0	0	27	5	32	0	0	0	0	0	13	4	17	0	0	0	0	0	9	7	16	0	0	0	0	0	9	6	15	0	1	0	0	0	16	29	46	0	0	0	0	14	21	35	161	
% App. Total	0	0	0	0	0	84.4	15.6		0	0	0	0	0	76.5	23.5		0	0	0	0	0	56.2	43.8		0	0	0	0	0	60	40		0	2.2	0	0	0	34.8	63		0	0	0	0	40	60			
PHF	.000	.000	.000	.000	.000	.422	.417	.500	.000	.000	.000	.000	.000	.542	.500	.607	.000	.000	.000	.000	.000	.750	.292	.500	.000	.000	.000	.000	.000	.563	.375	.625	.000	.250	.000	.000	.000	.333	.806	.523	.000	.000	.000	.000	.350	.875	.547	.745	

Peak Hour Analysis From 12:45 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:45 PM

02:45 PM	0	0	0	0	0	2	2	4	0	0	0	0	0	3	5	8	0	0	1	0	0	5	5	11	0	0	0	0	0	5	3	8	0	0	0	0	0	6	7	13	0	0	0	0	0	7	8	15	59
03:00 PM	0	0	0	0	0	0	6	6	0	0	0	0	0	1	4	5	0	0	0	0	0	4	2	6	0	0	0	0	0	6	1	7	0	0	1	0	0	4	7	12	0	0	0	0	0	1	7	8	44
03:15 PM	0	0	0	0	0	0	4	4	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	1	1	0	0	0	3	6	10	0	0	0	0	0	2	5	7	25
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	8	0	0	0	0	0	2	6	8	27	
Total Volume	0	0	0	0	0	2	12	14	0	0	0	0	0	8	17	25	0	0	1	0	0	10	8	19	1	0	0	0	0	11	4	16	1	0	1	0	0	15	26	43	0	0	0	0	12	26	38	155	
% App. Total	0	0	0	0	0	14.3	85.7		0	0	0	0	0	32	68		0	0	5.3	0	0	52.6	42.1		6.2	0	0	0	0	68.8	25		2.3	0	2.3	0	0	34.9	60.5		0	0	0	0	31.6	68.4			
PHF	.000	.000	.000	.000	.000	.250	.500	.583	.000	.000	.000	.000	.000	.667	.531	.568	.000	.000	.250	.000	.000	.500	.400	.432	.250	.000	.000	.000	.000	.458	.333	.500	.250	.000	.250	.000	.000	.625	.929	.827	.000	.000	.000	.000	.429	.813	.633	.657	

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
 E/W/NW: Lowell St/ Westminster Ave  
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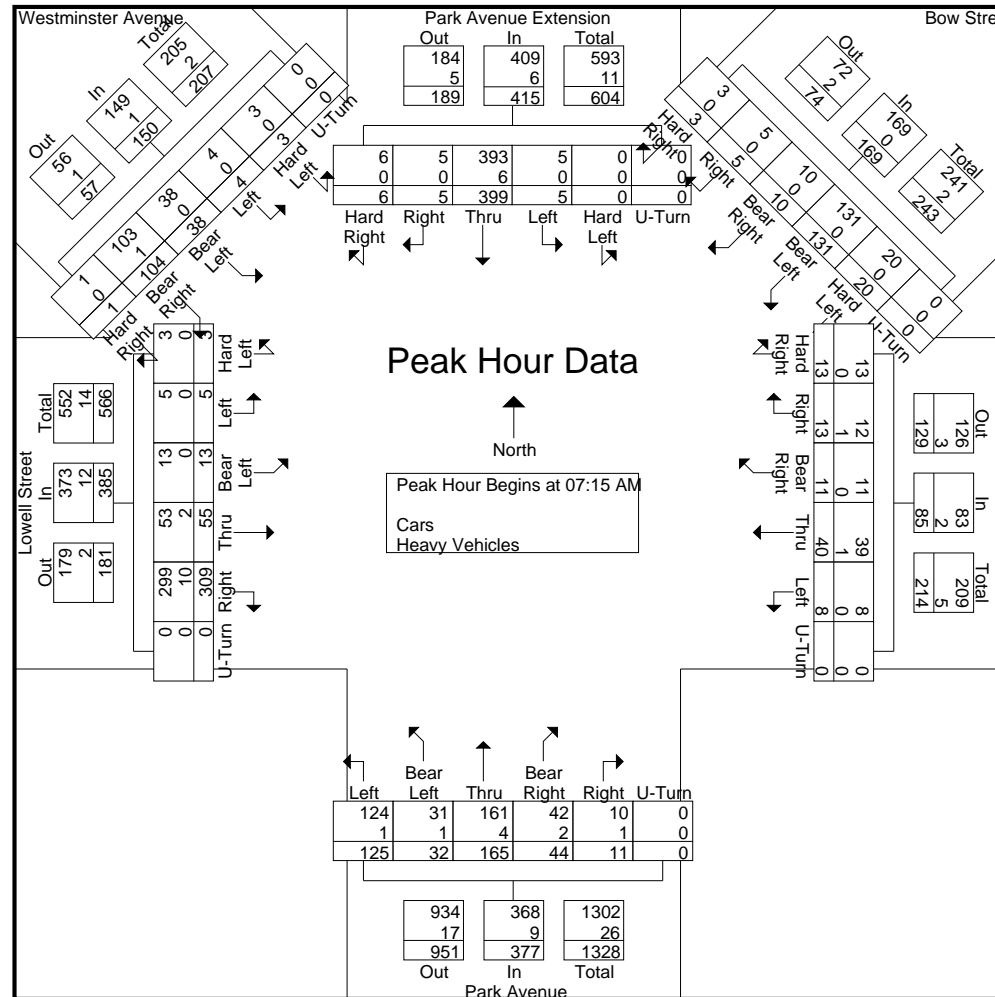


File Name : 165340 A  
 Site Code : TBA  
 Start Date : 10/20/2016  
 Page No : 1

	Park Avenue Extension From North							Bow Street From Northeast							Lowell Street From East							Park Avenue From South							Lowell Street From West							Westminster Avenue From Northwest									
Start Time	Hard Right	Right	Thru	Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Thru	Left	U- Turn	App. Total	Right	Bear Right	Thru	Bear Left	Left	U- Turn	App. Total	Right	Thru	Bear Left	Left	Hard Left	U- Turn	App. Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U- Turn	App. Total	Int. Total		
Peak Hour Analysis From 06:30 AM to 12:30 PM - Peak 1 of 1																																													
Peak Hour for Entire Intersection Begins at 07:15 AM																																													
07:15 AM	2	1	116	1	0	0	120	1	1	2	19	1	0	24	2	10	2	13	0	0	27	3	6	32	7	20	0	68	73	20	3	1	0	0	97	0	23	11	2	0	0	36	372		
07:30 AM	1	1	101	1	0	0	104	2	2	0	51	7	0	62	2	0	4	6	0	0	12	2	14	39	8	29	0	92	80	10	5	2	3	0	100	1	23	13	0	0	0	37	407		
07:45 AM	3	0	79	2	0	0	84	0	1	3	33	7	0	44	3	2	5	9	6	0	25	3	11	46	13	38	0	111	79	17	3	0	0	0	99	0	27	7	0	1	0	35	398		
08:00 AM	0	3	103	1	0	0	107	0	1	5	28	5	0	39	6	1	0	12	2	0	21	3	13	48	4	38	0	106	77	8	2	2	0	0	89	0	31	7	2	2	0	42	404		
Total Volume	6	5	399	5	0	0	415	3	5	10	131	20	0	169	13	13	11	40	8	0	85	11	44	165	32	125	0	377	309	55	13	5	3	0	385	1	104	38	4	3	0	150	1581		
% App. Total	1.4	1.2	96.1	1.2	0	0		1.8	3	5.9	77.5	11.8	0		15.3	15.3	12.9	47.1	9.4	0		2.9	11.7	43.8	8.5	33.2	0		80.3	14.3	3.4	1.3	0.8	0		0.7	69.3	25.3	2.7	2	0				
PHF	.500	.417	.860	.625	.000	.000	.865	.375	.625	.500	.642	.714	.000	.681	.542	.325	.550	.769	.333	.000	.787	.917	.786	.859	.615	.822	.000	.849	.966	.688	.650	.625	.250	.000	.963	.250	.839	.731	.500	.375	.000	.893	.971		
Cars	6	5	393	5	0	0	409	3	5	10	131	20	0	169	13	12	11	39	8	0	83	10	42	161	31	124	0	368	299	53	13	5	3	0	373	1	103	38	4	3	0	149	1551		
% Cars	100	100	98.5	100	0	0	98.6	100	100	100	100	100	0	100	100	92.3	100	97.5	100	0	97.6	90.9	95.5	97.6	96.9	99.2	0	97.6	96.8	96.4	100	100	100	0	96.9	100	99.0	100	100	100	0	99.3	98.1		
Heavy Vehicles	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	2	4	1	1	0	9	10	2	0	0	0	0	12	0	1	0	0	0	0	1	30		
% Heavy Vehicles	0	0	1.5	0	0	0	1.4	0	0	0	0	0	0	0	0	7.7	0	2.5	0	0	2.4	9.1	4.5	2.4	3.1	0.8	0	2.4	3.2	3.6	0	0	0	0	3.1	0	1.0	0	0	0	0	0.7	1.9		

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
 E/W/NW: Lowell St/ Westminster Ave  
 City, State: Arlington, MA  
 Client: BSC Group/ S. Oftei-Addo

File Name : 165340 A  
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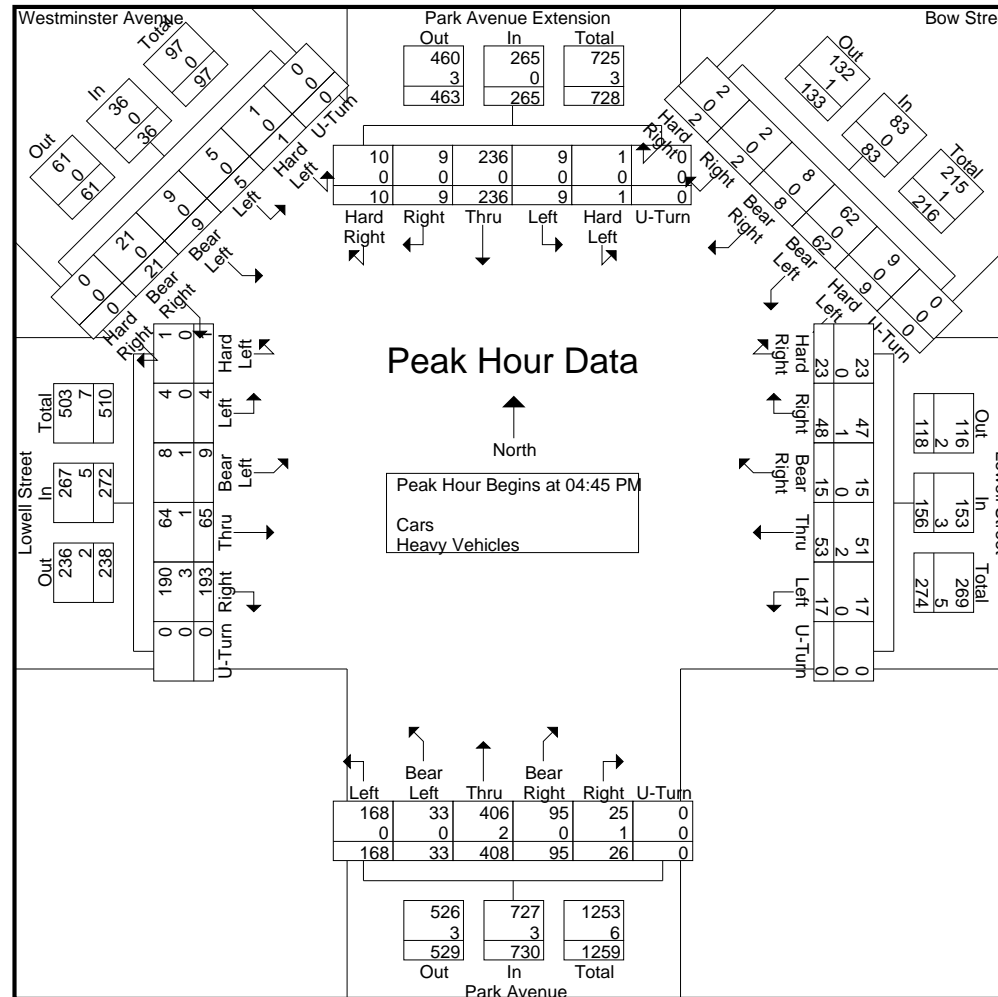
N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
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Start Date : 10/20/2016  
Page No : 3

	Park Avenue Extension From North						Bow Street From Northeast						Lowell Street From East						Park Avenue From South						Lowell Street From West						Westminster Avenue From Northwest													
Start Time	Hard Right	Right	Thru	Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Bear Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Bear Right	Thru	Left	U- Turn	App. Total	Right	Bear Right	Thru	Bear Left	Left	U- Turn	App. Total	Right	Thru	Bear Left	Left	Hard Left	U- Turn	App. Total	Hard Right	Bear Right	Bear Left	Left	Hard Left	U- Turn	App. Total	Int. Total	
Peak Hour Analysis From 12:45 PM to 06:15 PM - Peak 1 of 1																																												
Peak Hour for Entire Intersection Begins at 04:45 PM																																												
04:45 PM	1	1	57	5	1	0	65	0	1	1	19	3	0	24	5	15	0	16	5	0	41	8	25	99	12	39	0	183	32	14	3	1	0	0	50	0	2	2	3	0	0	7	370	
05:00 PM	2	5	58	2	0	0	67	1	1	2	14	3	0	21	4	15	5	13	4	0	41	6	24	98	7	51	0	186	53	18	2	2	0	0	75	0	6	0	2	0	0	8	398	
05:15 PM	1	2	68	1	0	0	72	1	0	2	14	1	0	18	6	11	4	10	4	0	35	6	28	111	8	34	0	187	55	11	2	1	1	0	70	0	5	1	0	1	0	7	389	
05:30 PM	6	1	53	1	0	0	61	0	0	3	15	2	0	20	8	7	6	14	4	0	39	6	18	100	6	44	0	174	53	22	2	0	0	0	77	0	8	6	0	0	0	14	385	
Total Volume	10	9	236	9	1	0	265	2	2	8	62	9	0	83	23	48	15	53	17	0	156	26	95	408	33	168	0	730	193	65	9	4	1	0	272	0	21	9	5	1	0	36	1542	
% App. Total	3.8	3.4	89.1	3.4	0.4	0		2.4	2.4	9.6	74.7	10.8	0		14.7	30.8	9.6	34	10.9	0		3.6	13	55.9	4.5	23	0		71	23.9	3.3	1.5	0.4	0		0	58.3	25	13.9	2.8	0			
PHF	.417	.450	.868	.450	.250	.000	.920	.500	.500	.667	.816	.750	.000	.865	.719	.800	.625	.828	.850	.000	.951	.813	.848	.919	.688	.824	.000	.976	.877	.739	.750	.500	.250	.000	.883	.000	.656	.375	.417	.250	.000	.643	.969	
Cars	100	9	236	9	1	0	265	2	2	8	62	9	0	83	23	47	15	51	17	0	153	25	95	406	33	168	0	727	190	64	8	4	1	0	267	0	21	9	5	1	0	36	1531	
% Cars	100	100	100	100	100	0	100	100	100	100	100	100	0	100	100	97.9	100	96.2	100	0	98.1	96.2	100	99.5	100	100	0	99.6	98.4	98.5	88.9	100	100	0	98.2	0	100	100	100	100	0	100	99.3	
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	1	0	2	0	0	0	3	3	1	1	0	0	0	5	0	0	0	0	0	0	0	0	11
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0	3.8	0	0	1.9	3.8	0	0.5	0	0	0	0.4	1.6	1.5	11.1	0	0	0	1.8	0	0	0	0	0	0	0	0.7	

N/S/NE: Park Ave Ext/ Park Ave/ Bow St  
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 City, State: Arlington, MA  
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File Name : 165340 A  
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 Start Date : 10/20/2016  
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## Appendix B: Transit Information

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ROUTE 1Depot Square – East Lexington via Pleasant St & Mass Ave					
Depart Depot Square	Depart Community Center front door	Depart Fottler Avenue🟢	Depart Lillian Road🟡	Depart Arlington Heights🟡	Arrive Depot Square
🔴 6:35AM	-	-	6:47AM	6:50AM	6:59AM
🟢 7:30	-	-	7:42	7:45	7:52
8:30	8:35AM	8:45AM	-	-	8:56
9:30	9:35	9:45	-	-	9:56
10:30	10:35	10:45	-	-	10:56
11:30	11:35	11:45	-	-	11:56
12:30PM	12:35PM	12:45PM	-	-	12:56PM
1:30	1:35	1:45	-	-	1:56
2:35	2:40	2:50	-	-	2:59
3:45	3:50	-	4:01PM	4:04PM	4:12
4:55	-	-	5:07	5:10	5:18
6:00	-	-	6:12	6:15	6:23

ROUTE 2Depot Sq – Avalon at Lexington Hills via Worthen Rd, Follen Rd & Waltham St					
Depart Depot Square	Depart Community Center front door	Depart Avalon at Lex. Hills	Depart Clarke School	Depart Vynebrooke Village🟡	Arrive Depot Square
🟢 7:00AM	-	7:14AM	7:20AM	7:22AM	7:29AM
8:00	-	8:14	8:20	8:22	8:25
9:00	9:08AM	9:17	9:23	9:26	9:28
10:00	10:08	10:17	10:23	10:26	10:28
11:00	11:08	11:17	11:23	11:26	11:28
12:00PM	12:08PM	12:17PM	12:23PM	12:26PM	12:28PM
1:00	1:08	1:17	1:23	1:26	1:28
2:00	2:08	2:17	2:23	2:26	2:28
3:10	3:18	3:27	3:33	3:36	3:38
4:20	4:28	4:37	4:43	4:46	4:48
5:30	-	5:44	5:50	5:52	5:55

- 🔴 - 6:35AM service on Routes 1, 3 and 5; school year only. Drop-off at Lexington High School at end of route
- 🟢 - 7:30AM service on Routes 1, 3 and 5; summer only
- 🟢 - Service to Hillcrest Ave & Fottler Ave only during listed times
- 🟡 - Service to Lillian Rd, Lowell St, Arlington Heights only during listed times

ROUTE 3Depot Square – South Lexington via Marrett Rd, Spring St & Hayden Ave					
Depart Depot Square	Depart Hayden Ave at Lahey Clinic🟡	Depart Avalon at Lexington Ridge	Depart Marrett Rd & Lincoln Street	Depart Hayden Rec Center	Arrive Depot Square
🔴 6:35AM	6:43AM	6:45AM	6:53AM	6:55AM	6:59AM
🟢 7:30	7:38	7:40	7:48	7:50	7:53
8:30	8:38	8:40	8:48	8:50	8:53
9:30	9:38	9:40	9:48	9:50	9:53
10:30	10:38	10:40	10:48	10:50	10:53
11:30	11:38	11:40	11:48	11:50	11:53
12:30PM	12:38PM	12:40PM	12:48PM	12:50PM	12:53PM
1:30	1:38	1:40	1:48	1:50	1:53
2:35	2:43	2:45	2:53	2:55	2:58
3:45	3:53	3:55	4:03	4:05	4:08
4:55	5:03	5:05	5:13	5:15	5:18
6:00	6:08	6:10	6:18	6:20	6:23

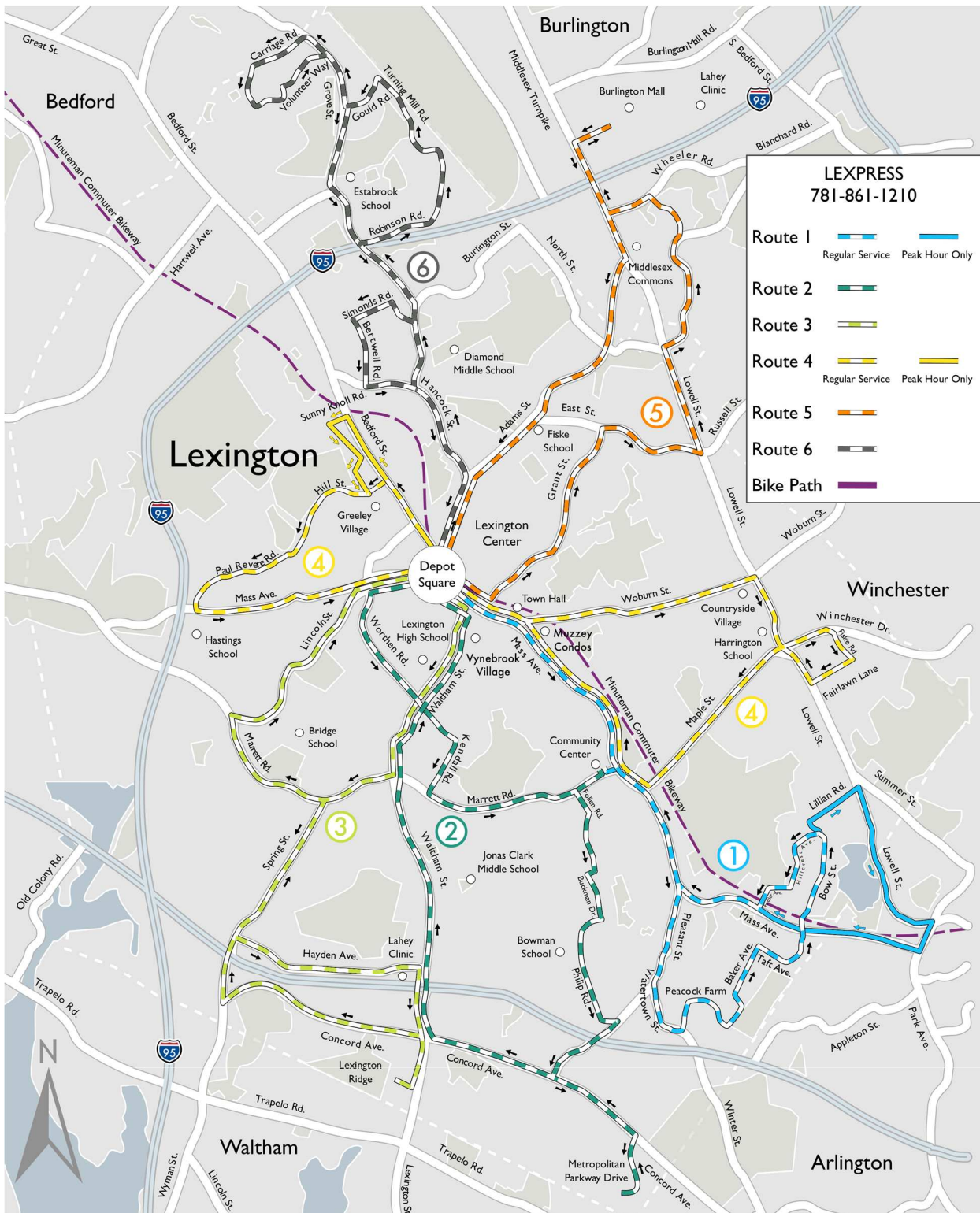
ROUTE 4Via Bedford St, Hill St, Mass Ave, Woburn St & Maple St					
Depart Depot Square	Depart Greeley Village	Depart Sunny Knoll Ave🔴	Depart Mass Ave Opposite Depot Sq	Depart Country- side Village	Arrive Depot Square
🟢 7:00AM	7:02AM	7:04AM	7:11AM	7:15AM	7:29AM
8:00	8:02	-	8:11	8:15	8:26
🟢 9:00	9:03	-	9:12	9:16	9:27
🟢 10:00	10:03	-	10:12	10:16	10:27
🟢 11:00	11:03	-	11:12	11:16	11:27
🟢 12:00PM	12:03PM	-	12:12PM	12:16PM	12:27PM
1:00	1:02	-	1:12	1:16	1:27
2:00	2:02	-	2:11	2:16	2:27
3:10	3:12	3:14PM	3:21	3:25	3:36
4:20	4:22	4:24	4:31	4:35	4:46
5:30	5:32	5:34	5:41	5:45	5:56

- 🟢 - Drop-off at Lexington High School at end of route during school year
- 🟡 - Drop-off in Vynebrooke Village only upon request from 10am - 2pm
- 🟡 - Pull in to Lahey Clinic only upon request
- 🟢 - Stop&Shop front entrance 2 minutes past the hour from 9am - Noon
- 🔴 - Service to Sunny Knoll, Reed St, Carley Rd, Milk St only during listed times

ROUTE 5Depot Square – Burlington Mall via Grant St & Middlesex Turnpike					
Depart Depot Square	Depart Lowell St & East St	Depart Middlesex Commons🟡	Depart Burlington Mall🔴	Depart Fiske School	Arrive Depot Square
🔴 6:35AM	6:40AM	-	6:50AM	6:57AM	6:59AM
🟢 7:30	7:35	7:39AM	7:45	7:52	7:56
8:30	8:35	8:39	8:45	8:52	8:56
9:30	9:35	9:39	9:45	9:52	9:56
10:30	10:35	10:39	10:45	10:52	10:56
11:30	11:35	11:39	11:45	11:52	11:56
12:30PM	12:35PM	12:39PM	12:45PM	12:52PM	12:56PM
1:30	1:35	1:39	1:45	1:52	1:56
2:35	2:40	2:44	2:50	2:57	3:01
3:45	3:50	3:54	4:00	4:07	4:11
4:55	5:00	5:04	5:10	5:17	5:21
6:00	6:05	6:09	6:15	6:22	6:26

ROUTE 6Depot Square – Estabrook School via Hancock St, Grove St & Carriage Dr					
Depart Depot Square	Depart Diamond Middle School	Depart Grove St & Carriage Drive	Depart Estabrook School	Depart North Hancock Street	Arrive Depot Square
🟢 7:00AM	7:03AM	7:10AM	7:14AM	7:19AM	7:29AM
8:00	8:03	8:10	8:14	8:19	8:22
9:00	9:03	9:10	9:14	9:19	9:22
10:00	10:03	10:10	10:14	10:19	10:22
11:00	11:03	11:10	11:14	11:19	11:22
12:00PM	12:03PM	12:10PM	12:14PM	12:19PM	12:22PM
1:00	1:03	1:10	1:14	1:19	1:22
2:00	2:03	2:10	2:14	2:19	2:22
3:10	3:13	3:20	3:24	3:29	3:32
4:20	4:23	4:30	4:34	4:39	4:42
5:30	5:33	5:40	5:44	5:49	5:52

- 🟡 - Market Basket – Connection to Burlington B-Line buses. At 6:35AM bus will turn left on Lowell St and proceed directly to the Burlington Mall
- 🔴 - Uno Chicago Grill mall entrance – Connections to LRT & B-Line buses



## LEXPRESS CASH FARES

	Fare*	Transfer
<b>Adult</b> Age 19 - 64	\$2.75	Free
<b>Student</b> Age 6 - 18	\$1.75	Free
<b>Senior Age 65+ /Special Needs</b>	\$0.75**	Free
<b>Child</b> Age 0 - 5	Free	Free

\*Drivers cannot make change. Medicare cardholders are eligible for senior/special needs rates.

\*\* Ride FREE from 9:00AM through 1:30PM routes.

## LEXPRESS TICKETS

Books of 14 tickets for \$20 sold at the Community Center, Michelson's Shoes, and Lexington High School front office.  
\$4 round-trip tickets sold on-board.

## LEXPRESS PASSES

Applications available online or in office

	*One Year	Six Month	Three Month	**One Month
<b>General</b> Age 6-64	\$350	\$225	\$140	\$60
<b>Senior 65+ /Special Needs</b>	\$125	\$75	\$50	\$20
<b>Family</b>	\$725	-	-	-

\* One year pass valid July through June only

\*\* Youth July/August Summer Pass - \$60

Funded by Town of Lexington



and MBTA

## LEXINGTON'S NEIGHBORHOOD BUS



**July 1, 2016**

**3PM - 6PM schedule change**

- Service Monday - Friday only
- All routes begin and end at Depot Square in Lexington Center
- Approximate times are listed for major destinations. Riders can board anywhere along the route - flag bus to stop
- Traffic does not stop for Lexpress, cross behind the bus after exiting

## MOBILE BUS TRACKER

**<http://tracker.lexpress.us>**

Your source for real - time arrival information

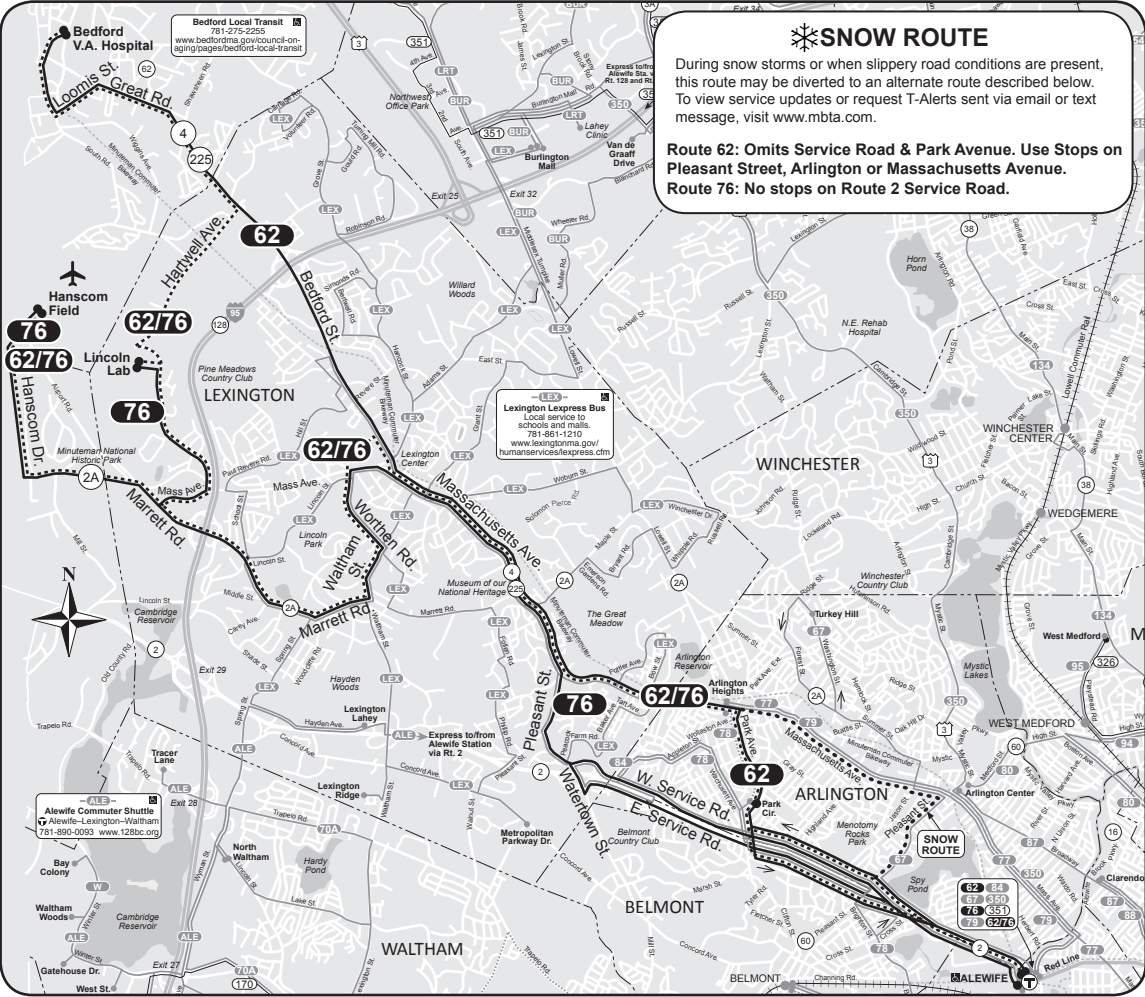
**Information: (781) 861-1210**

**[www.lexpress.us](http://www.lexpress.us)**





Route 62 Bedford VA Hospital - Alewife Station  
Route 76 Hanscom/Lincoln Lab - Alewife Station



schedule change

# 62•76

Fall September 3, 2016 - December 30, 2016

**62 Bedford VA Hospital-Alewife Station**  
**76 Hanscom/Lincoln Lab-Alewife Sta.**

**Serving**

- Bedford Center
- Hanscom Civil Air Terminal
- Lexington Center
- Arlington Heights
- Five Forks
- National Heritage Museum
- Lexington Battle Green
- Red Line



**Massachusetts Bay Transportation Authority** *massDOT*  
Massachusetts Department of Transportation

Information 617-222-3200 • 1-800-392-6100  
(TTY) 617-222-5146 • [www.mbta.com](http://www.mbta.com)

62 & 76

Weekday

Inbound				
Leave VA Hospital	Leave Lincoln Lab	Arrive Civil Air Terminal	Lv/Arrive Lexington Center	Arrive Alewife Station
76	.....	6:00A	6:07A	6:22A
62 b	6:24A	.....	.....	6:38
62	.....	.....	.....	6:50
76	.....	6:40	6:47	7:03
62	6:52	.....	.....	7:11
76	.....	7:00	7:08	7:26
62	.....	.....	.....	7:30
62	7:20	.....	.....	7:39
62	.....	.....	.....	7:50
76	.....	7:35	7:43	8:01
62	7:55	.....	.....	8:14
76	.....	8:11	8:19	8:37
62	8:32	.....	.....	8:51
76	.....	8:41	8:49	9:05
62	9:05	.....	.....	9:23
76	.....	9:11	9:18	9:33
62	9:45	.....	.....	10:04
76	.....	10:11	10:18	10:33
62	10:45	.....	.....	11:05
76	.....	11:11	11:18	11:33
62	11:45	.....	.....	12:05P
76	.....	12:11P	12:18P	12:33P
62	12:45P	.....	.....	1:05
76	.....	1:18	.....	1:32
62	1:45	.....	.....	2:05
76	.....	2:20	.....	2:35
62	2:45	.....	.....	3:05
76	.....	3:23	.....	3:38
62	3:50	.....	.....	4:08
76	.....	4:33	.....	4:48
62	4:35	.....	.....	4:53
76	.....	5:05	.....	5:20
62	5:05	.....	.....	5:23
62	.....	.....	.....	5:47
76	.....	5:40	.....	5:55
62	5:55	.....	.....	6:11
76	.....	6:10	.....	6:25
62	6:25	.....	.....	6:41
76	.....	6:36	.....	6:47
62	6:44	.....	.....	7:00
76	.....	7:03	.....	7:14
62	7:15	.....	.....	7:31
76	.....	7:35	.....	7:46
62 b	7:55	.....	.....	8:05
76	.....	f 8:05	.....	8:11
62 b	8:40	.....	.....	8:50
76	.....	f 9:05	.....	9:11
76	.....	10:15	.....	10:26

Outbound				
Leave Alewife Station	Arrive Lexington Center	Arrive Civil Air Terminal	Arrive Lincoln Lab	Arrive VA Hospital
62 b	5:47A	6:03A	.....	.....
76	6:05	6:20	.....	6:34A
62	6:10	6:29	.....	6:45A
76	6:20	6:35	.....	6:49
62	6:40	6:59	.....	7:15
76	7:00	7:15	.....	7:29
62	7:10	7:29	.....	7:48
76	7:30	7:45	.....	7:59
62	7:45	8:06	.....	8:25
76	8:00	8:18	.....	8:34
62	8:15	8:37	.....	8:55
76	8:30	8:48	.....	9:04
62	9:00	9:19	.....	9:37
76	9:30	9:46	.....	10:00
62	9:55	10:14	.....	10:32
76	10:30	10:46	.....	11:00
62	10:55	11:14	.....	11:32
76	11:30	11:46	.....	12:00N
62	11:55	12:14P	.....	12:32P
76	12:30P	12:46P	1:00P	1:10P
62	12:55	1:14	.....	1:33
76	1:30	1:46	2:00	2:10
62	1:55	2:15	.....	2:36
76	2:30	2:47	3:06	3:18
62	3:00	3:25	.....	3:45
76	3:30	3:48	4:09	4:24
62	3:45	4:10	.....	4:33
76	4:05	4:25	4:46	5:00
62	4:10	4:35	.....	4:58
76	4:40	4:59	5:16	5:28
62	4:50	5:14	.....	5:35
76	5:05	5:28	5:45	5:57
62 c	5:15	5:42	.....	.....
62	5:25	5:49	.....	6:10
76	5:35	5:58	6:12	6:21
62	5:47	6:10	.....	6:30
62 c	5:59	6:21	.....	.....
76	6:10	6:30	6:44	6:53
62	6:20	6:41	.....	7:01
76	6:45	7:05	7:19	7:28
62 b	7:10	7:30	.....	.....
76	f 7:35	7:53	.....	.....
62 b	8:05	8:23	.....	.....
76	f 8:35	8:53	.....	.....
76	9:35	9:50	10:01	10:10

Route 76 indicated by shaded areas

62 & 76

Saturday

Inbound				Outbound			
Leave VA Hospital	Arrive Civil Air Terminal	Arrive Lexington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Lexington Center	Arrive Civil Air Terminal	Arrive VA Hospital
8:00A	8:19A	8:37A	8:52A	7:00A	7:16A	7:29A	7:48A
9:10	9:29	9:47	10:02	8:00	8:18	8:31	8:52
10:20	10:39	10:57	11:12	9:10	9:28	9:41	10:02
11:30	11:49	12:07P	12:26P	10:20	10:40	10:54	11:17
				11:30	11:50	12:04P	12:27P
12:40P	12:59P	1:16P	1:34P	12:40P	1:00P	1:14P	1:36P
1:50	2:09	2:26	2:44	1:50	2:07	2:21	2:44
3:00	3:19	3:36	3:53	3:00	3:19	3:33	3:56
4:00	4:19	4:35	4:54	4:00	4:18	4:30	4:52
5:00	5:19	5:34	5:50	5:00	5:18	5:30	5:52
6:00	6:17	6:32	6:47	6:00	6:18	6:30	6:50
7:00	7:17	7:31	7:47	7:00	7:18	7:30	7:50
8:00	8:18	8:31	8:47				

- b - To/from Bedford Center. Does NOT serve VA Hospital.
- c - To Lexington Center
- f - Operates between Five Forks and Alewife Station and does NOT serve Lincoln Lab or Hanscom Civil Air Terminal.

**NOTE:** No Saturday service on Bedford Street between Lexington Center and Hartwell Avenue. All Saturday service operates via Arlington Heights.

All buses are accessible to persons with disabilities

ROUTE 76 NOTE:

For AM weekday outbound service to Hanscom Civil Air Terminal, stay on bus at Lincoln Lab. In the PM the bus will serve Hanscom then Lincoln Lab.

Route 62 & 76  
Bedford VA  
Hospital or  
Hanscom/  
Lincoln Lab-  
Alewife Station

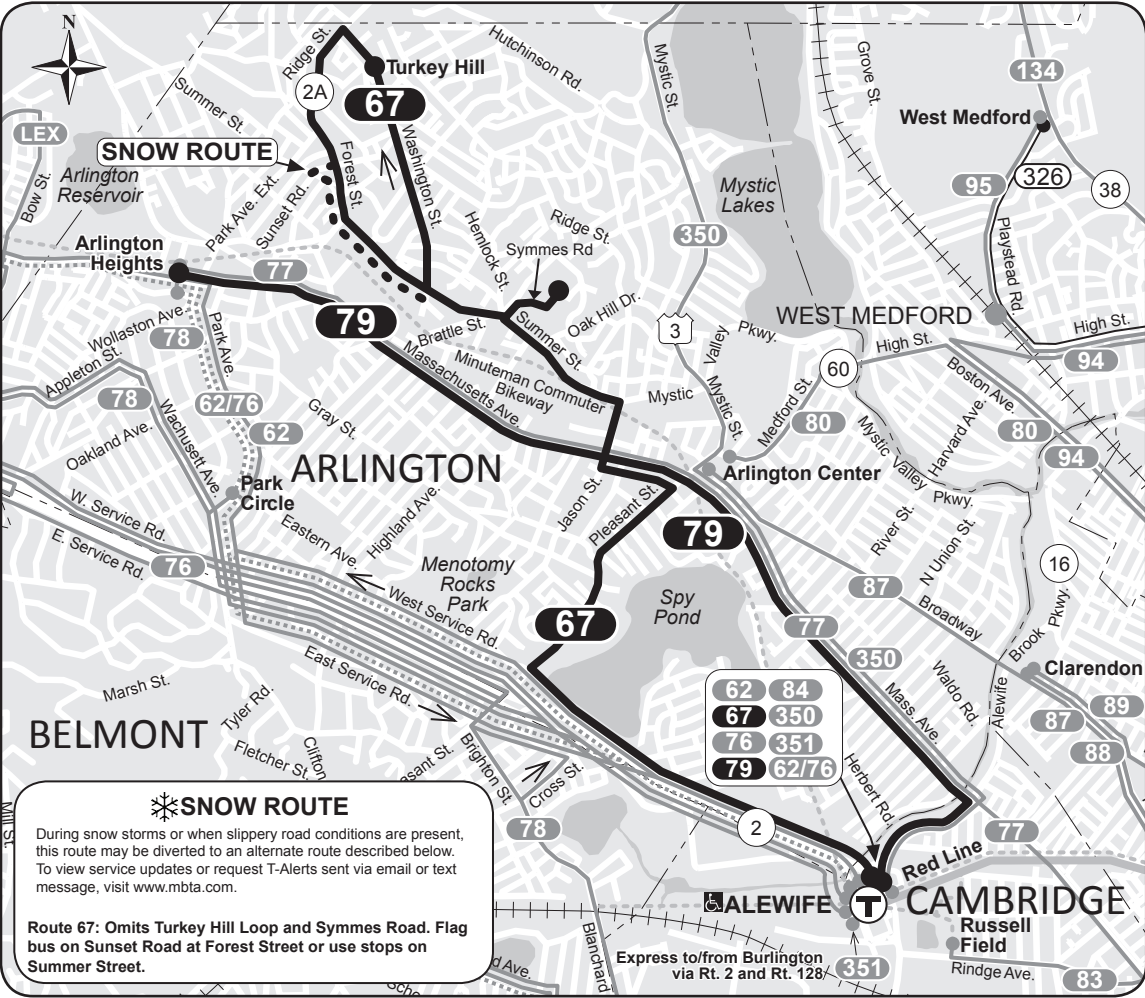
		+		+
Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.25	\$2.25
CharlieTicket	\$2.00	\$2.00	\$2.75	\$4.75
Cash-on-Board	\$2.00	\$4.00	\$2.75	\$4.75
Student*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$84.50/mo.); Local Bus (\$55/mo.); \*Student LinkPass (\$30.00/mo.); \*\*Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and boat passes.  
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.  
\* Requires Student CharlieCard, available to students through participating middle schools and high schools.  
\*\* Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2016 Holidays  
October 10 & November 11: see Weekday  
September 5, November 24 & December 26: see Sunday

No service  
on Sunday

**Route 67 Turkey Hill - Alewife Station**  
**Route 79 Arlington Heights - Alewife Station**



schedule change

**67•79**

Fall September 3, 2016 - December 30, 2016

**67 Turkey Hill-Alewife Station**  
**79 Arlington Heights-Alewife Station**

**Serving**

- Arlington High School
- Arlington Town Hall
- Arlington Center
- Red Line



**Massachusetts Bay Transportation Authority**  
**massDOT**  
Massachusetts Department of Transportation  
Information 617-222-3200 • 1-800-392-6100  
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67 Weekday					
Inbound			Outbound		
Leave Turkey Hill	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Turkey Hill
6:18A	6:25A	6:34A	5:53A	6:00A	6:13A
6:52	6:59	7:10	6:26	6:33	6:46
7:25	7:34	7:48	6:59	7:06	7:19
7:52	8:01	8:15	7:26	7:33	7:47
8:19	8:28	8:43	7:53	8:00	8:14
8:46	8:53	9:05	8:23	8:30	8:42
9:10	9:17	9:27	8:47	8:54	9:06
10:00	10:07	10:17	9:37	9:44	9:56
10:50	10:57	11:07	10:27	10:34	10:46
11:40	11:47	11:56	11:17	11:24	11:36
12:30P	12:37P	12:46P	12:07P	12:14P	12:26P
1:20	1:27	1:36	12:57	1:04	1:16
2:10	2:17	2:26	1:42	1:49	2:01
3:00	3:07	3:16	2:32	2:41	2:54
3:50	3:57	4:06	3:22	3:31	3:44
4:40	4:47	4:56	4:12	4:21	4:34
5:08	5:16	5:26	4:44	4:55	5:08
5:35	5:43	5:53	5:11	5:22	5:35
6:03	6:11	6:21	5:38	5:49	6:02
6:31	6:37	6:46	6:05	6:16	6:29
6:56	7:02	7:11	6:33	6:41	6:54
7:35	7:41	7:49	7:15	7:23	7:35
8:18	8:24	8:32	7:58	8:05	8:16

**Service Note:** Route 67  
Serves Symmes Road OUTBOUND ONLY.

**Route 67**  
**Turkey Hill-Alewife Station**





79 Weekday					
Inbound			Outbound		
Leave Arlington Heights	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Arlington Heights
6:40A	6:46A	6:57A	7:00A	7:08A	7:19A
7:00	7:06	7:17	7:20	7:28	7:39
7:20	7:26	7:41	7:45	7:53	8:04
7:45	7:52	8:08	8:10	8:18	8:29
8:10	8:17	8:33	8:35	8:43	8:54
8:35	8:42	8:58	9:00	9:08	9:19
9:00	9:05	9:15	9:50	9:57	10:06
9:25	9:30	9:40	10:40	10:47	10:56
10:15	10:20	10:30	11:30	11:37	11:46
11:05	11:10	11:20			
11:55	12:00N	12:10P			
12:45P	12:50P	1:00P	12:20P	12:27P	12:37P
1:35	1:40	1:50	1:10	1:17	1:27
2:25	2:30	2:42	2:00	2:07	2:17
s 2:35	2:41	2:55	2:25	2:32	2:42
s 2:45	2:51	3:05	2:45	2:52	3:02
2:55	3:01	3:13	3:05	3:12	3:22
s 2:55	3:01	3:15	3:30	3:37	3:47
3:15	3:21	3:33	3:50	3:57	4:07
3:35	3:41	3:53	4:10	4:17	4:27
3:55	4:01	4:13	4:30	4:40	4:50
4:15	4:21	4:33	4:50	5:00	5:10
4:35	4:41	4:53	5:10	5:20	5:30
4:55	5:01	5:13	5:30	5:42	5:53
5:15	5:21	5:33	5:50	6:02	6:13
5:40	5:46	5:58	6:10	6:22	6:32
6:05	6:11	6:23	6:30	6:41	6:50
6:35	6:41	6:53	6:55	7:06	7:15
7:20	7:24	7:33	7:45	7:51	7:58
8:05	8:09	8:18	8:30	8:36	8:43
8:50	8:54	9:03	9:10	9:16	9:23
9:30	9:34	9:43	9:50	9:56	10:03

s - Leaves from Massachusetts Avenue at Appleton Street and does NOT run during school vacation

**Route 79**  
**Arlington Heights-Alewife Station**

No service on weekends.

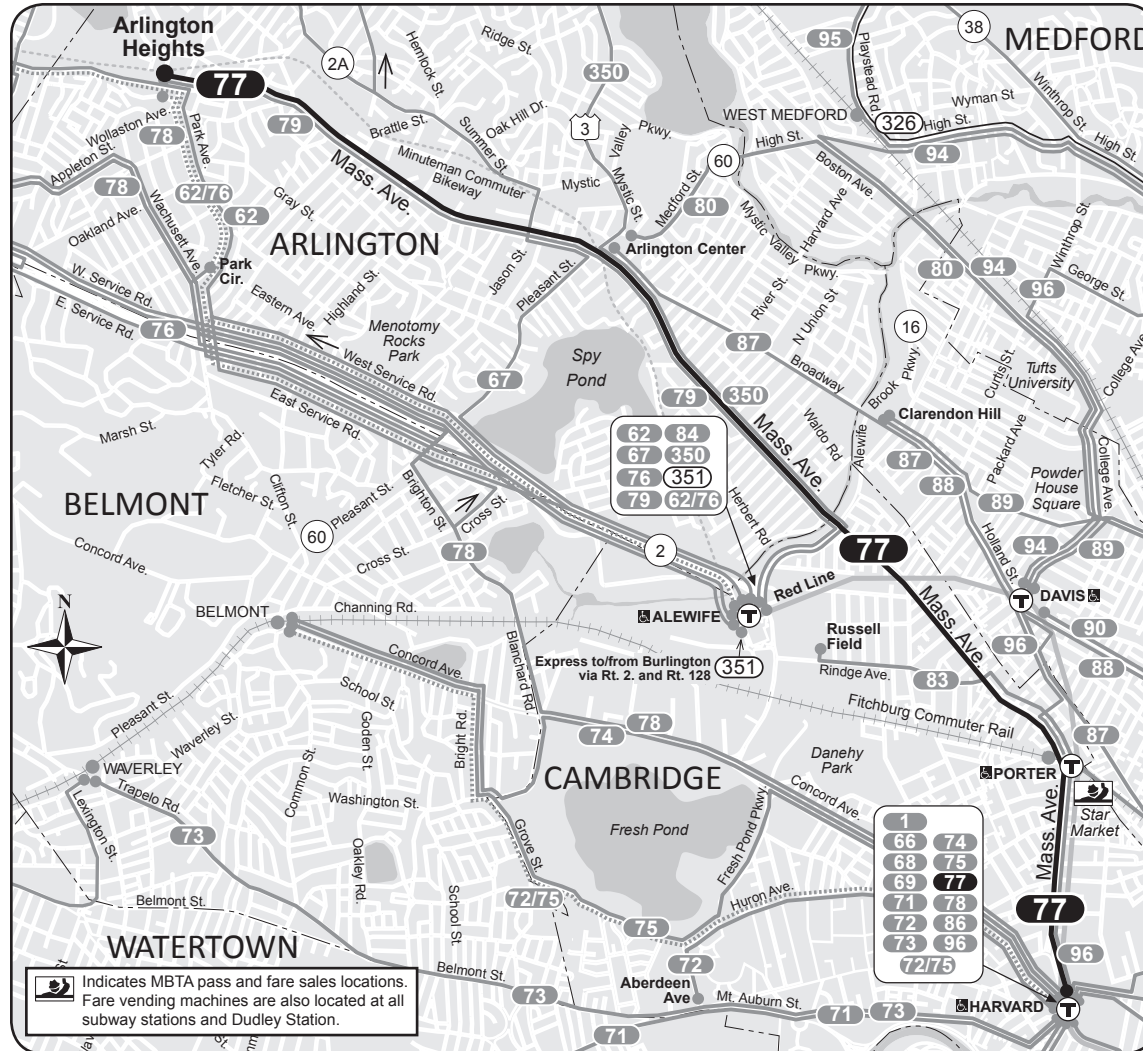
 All buses are accessible to persons with disabilities

				
Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.25	\$2.25
CharlieTicket	\$2.00	\$2.00	\$2.75	\$4.75
Cash-on-Board	\$2.00	\$4.00	\$2.75	\$4.75
Student*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$84.50/mo.); Local Bus (\$55/mo.); \*Student LinkPass (\$30.00/mo.); \*\*Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and boat passes.  
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.  
\* Requires Student CharlieCard, available to students through participating middle schools and high schools.  
\*\* Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

**Fall 2016 Holidays**  
October 10 & November 11: see Weekday  
September 5, November 24 & December 26: see Sunday

## Route 77 Arlington Heights - Harvard Station



schedule change

# 77

Fall September 3, 2016 - December 30, 2016

## Arlington Heights- Harvard Station

### Serving

- Porter Station
- Arlington High School
- Arlington Center
- Harvard University
- Eliot Street
- Red Line
- Fitchburg Commuter Rail



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Massachusetts Department of Transportation

Information 617-222-3200 • 1-800-392-6100  
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Inbound				Outbound			
Leave Arlington Heights	Arrive Arlington Center	Lv/Arrive North Camb.	Arrive Harvard Station	Leave Harvard Station Upper Busway	Arrive North Camb.	Arrive Arlington Center	Arrive Arlington Heights
.....	.....	4:43A	4:51A	5:12A	5:19A	5:24A	5:30A
4:48A	4:51A	4:59	5:08	5:24	5:31	5:36	5:42
.....	.....	5:03	5:11	5:36	5:43	5:48	5:54
5:00	5:03	5:11	5:20	5:48	5:55	6:01	6:08
.....	.....	5:23	5:31	6:00	6:09	6:17	6:24
5:12	5:15	5:23	5:32	6:12	6:21	6:29	6:36
5:24	5:27	5:35	5:44	6:24	6:33	6:41	6:48
.....	.....	5:40	5:48	Every	10 Mins.	or Less	
5:36	5:39	5:47	5:56	11:24	11:37	11:46	11:55
.....	.....	5:57	6:05	11:36	11:49	11:58	12:07P
5:48	5:51	5:59	6:09	11:48	12:01P	12:10P	12:19
.....	.....	6:03	6:11				
6:00	6:04	6:14	6:24	12:00N	12:13P	12:22P	12:31P
.....	.....	6:18	6:26	Every	12 Minutes	Until	
6:10	6:14	6:24	6:34	1:00	1:13	1:22	1:31
Every	10 Mins	Until		1:11	1:24	1:33	1:42
6:50	6:54	7:06	7:21	1:23	1:36	1:45	1:54
.....	.....	7:12	7:24	1:35	1:48	1:57	2:06
7:00	7:07	7:20	7:35	1:47	2:00	2:09	2:18
7:09	7:16	7:29	7:44	1:59	2:12	2:21	2:30
7:18	7:25	7:38	7:53	Every	9 Mins.	or Less	
.....	.....	7:38	7:48	6:46	7:00	7:09	7:18
7:27	7:34	7:47	8:02	6:49	7:01	.....	.....
Every	10 Mins.	or Less		6:54	7:08	7:17	7:26
10:39	10:45	10:56	11:09	7:02	7:16	7:25	7:34
Every	12 Minutes	Until		7:10	7:24	7:33	7:42
11:51	11:57	12:08P	12:21P	7:14	7:26	.....	.....
				7:18	7:32	7:41	7:50
12:03P	12:09P	12:20P	12:33P	7:26	7:40	7:49	7:58
Every	12 Minutes	Until		7:30	7:42	.....	.....
1:27	1:33	1:44	1:57	7:36	7:50	7:59	8:08
1:36	1:42	1:53	2:06	7:46	8:00	8:09	8:18
Every	10 Mins.	or Less		7:56	8:10	8:19	8:28
7:44	7:48	7:56	8:08	8:00	8:12	.....	.....
7:56	8:00	8:08	8:20	8:06	8:20	8:29	8:36
.....	.....	8:12	8:22	8:14	8:26	.....	.....
8:08	8:12	8:20	8:32	8:16	8:30	8:38	8:45
8:20	8:24	8:32	8:44	8:26	8:37	8:45	8:52
8:32	8:36	8:44	8:56	8:37	8:48	8:56	9:03
.....	.....	8:49	8:59	8:46	8:56	.....	.....
8:44	8:48	8:56	9:08	8:48	8:59	9:07	9:14
8:56	9:00	9:08	9:20	8:59	9:10	9:18	9:25
9:08	9:12	9:20	9:32	9:10	9:21	9:29	9:36
9:20	9:24	9:32	9:44	9:21	9:32	9:40	9:47
Every	13 Minutes	Until		9:22	9:32	.....	.....
11:30	11:33	11:39	11:49	9:32	9:43	9:51	9:58
11:43	11:46	11:52	12:01A	Every	13 Minutes	Until	
11:56	11:59	12:04A	12:13	12:47A	12:56A	1:02A	1:09A
12:09A	12:12A	12:17	12:26	w 1:00	1:09	1:15	1:22
12:22	12:25	12:30	12:39	1:11	1:21	.....	.....
12:35	12:38	12:43	12:52	1:31	1:41	.....	.....

Inbound				Outbound			
Leave Arlington Heights	Arrive Arlington Center	Lv/Arrive North Camb.	Arrive Harvard Station	Leave Harvard Station Upper Busway	Arrive North Camb.	Arrive Arlington Center	Arrive Arlington Heights
.....	.....	4:50A	4:57A	5:18A	5:23A	5:28A	5:34A
4:48A	4:50A	4:56	5:05	5:33	5:38	5:43	5:49
.....	.....	5:10	5:17	<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>	
5:03	5:05	5:11	5:20	8:33	8:40	8:48	8:56
<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>		8:45	8:52	9:00	9:08
6:33	6:36	6:42	6:53	8:57	9:04	9:12	9:20
.....	.....	6:42	6:49	9:09	9:16	9:24	9:33
6:48	6:51	6:57	7:08	9:21	9:28	9:36	9:46
7:03	7:06	7:14	7:25	9:33	9:41	9:49	9:59
<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>		9:45	9:53	10:01	10:11
8:33	8:37	8:45	8:57	9:57	10:05	10:13	10:23
8:45	8:49	8:57	9:11	10:09	10:17	10:25	10:35
8:57	9:01	9:11	9:25	10:20	10:28	10:36	10:46
9:09	9:13	9:23	9:37	<i>Every</i>	<i>10 Mins</i>	<i>Until</i>	
9:21	9:25	9:35	9:49	11:50	11:59	<b>12:07P</b>	<b>12:17P</b>
.....	.....	9:45	9:55				
9:33	9:37	9:47	10:01	<b>12:00N</b>	<b>12:09P</b>	<b>12:17P</b>	<b>12:27P</b>
9:44	9:48	9:58	10:12	<i>Every</i>	<i>10 Mins</i>	<i>Until</i>	
<i>Every</i>	<i>10 Mins</i>	<i>Until</i>		<b>6:00</b>	<b>6:09</b>	<b>6:17</b>	<b>6:27</b>
11:44	11:48	<b>12:00N</b>	<b>12:14P</b>	<b>6:10</b>	<b>6:19</b>	<b>6:27</b>	<b>6:37</b>
11:53	11:57	<b>12:09</b>	<b>12:23</b>	<b>6:21</b>	<b>6:30</b>	<b>6:38</b>	<b>6:48</b>
				<b>6:31</b>	<b>6:41</b>	.....	.....
<b>12:01P</b>	<b>12:05P</b>	<b>12:17P</b>	<b>12:31P</b>	<b>6:32</b>	<b>6:41</b>	<b>6:49</b>	<b>6:59</b>
<b>12:10</b>	<b>12:14</b>	<b>12:26</b>	<b>12:40</b>	<b>6:43</b>	<b>6:52</b>	<b>7:00</b>	<b>7:10</b>
<i>Every</i>	<i>10 Mins</i>	<i>Until</i>		<b>6:55</b>	<b>7:04</b>	<b>7:12</b>	<b>7:22</b>
<b>5:30</b>	<b>5:34</b>	<b>5:45</b>	<b>5:59</b>	<i>Every</i>	<i>12 Mins</i>	<i>Until</i>	
<b>5:42</b>	<b>5:46</b>	<b>5:57</b>	<b>6:11</b>	<b>9:55</b>	<b>10:03</b>	<b>10:10</b>	<b>10:18</b>
<b>5:54</b>	<b>5:58</b>	<b>6:09</b>	<b>6:23</b>	<b>10:07</b>	<b>10:15</b>	<b>10:22</b>	<b>10:30</b>
<b>6:06</b>	<b>6:10</b>	<b>6:21</b>	<b>6:35</b>	<b>10:21</b>	<b>10:29</b>	<b>10:36</b>	<b>10:44</b>
<b>6:18</b>	<b>6:22</b>	<b>6:33</b>	<b>6:47</b>	<b>10:35</b>	<b>10:43</b>	<b>10:50</b>	<b>10:58</b>
<b>6:28</b>	<b>6:32</b>	<b>6:43</b>	<b>6:57</b>	<b>10:50</b>	<b>10:58</b>	<b>11:05</b>	<b>11:13</b>
<b>6:39</b>	<b>6:43</b>	<b>6:54</b>	<b>7:08</b>	<b>11:05</b>	<b>11:13</b>	<b>11:20</b>	<b>11:28</b>
<b>6:50</b>	<b>6:54</b>	<b>7:05</b>	<b>7:19</b>	<b>11:20</b>	<b>11:28</b>	<b>11:35</b>	<b>11:43</b>
<b>7:02</b>	<b>7:06</b>	<b>7:17</b>	<b>7:31</b>	<b>11:35</b>	<b>11:43</b>	<b>11:50</b>	<b>11:58</b>
<b>7:19</b>	<b>7:23</b>	<b>7:33</b>	<b>7:46</b>	<b>11:50</b>	<b>11:58</b>	<b>12:04A</b>	<b>12:12A</b>
<i>Every</i>	<i>12 Mins</i>	<i>Until</i>		<b>12:05A</b>	<b>12:12A</b>	<b>12:18</b>	<b>12:26</b>
<b>9:19</b>	<b>9:22</b>	<b>9:30</b>	<b>9:43</b>	<b>12:20</b>	<b>12:27</b>	<b>12:33</b>	<b>12:40</b>
<b>9:34</b>	<b>9:37</b>	<b>9:45</b>	<b>9:58</b>	<b>12:35</b>	<b>12:41</b>	<b>12:47</b>	<b>12:54</b>

Inbound			Leave Harvard Station Upper Busway	Outbound	
Leave Arlington Heights	Arrive Arlington Center	Arrive Harvard Station		Arrive Arlington Center	Arrive Arlington Heights
6:00A <i>Every</i>	6:04A <i>20 Minutes</i>	6:24A <i>Until</i>	6:30A <i>Every</i>	6:43A <i>20 Minutes</i>	6:49A <i>Until</i>
9:00	9:05	9:26	8:50	9:05	9:13
9:18	9:23	9:44	9:15	9:30	9:38
9:30	9:35	9:56	9:35	9:50	9:58
9:45	9:50	10:12	9:52	10:07	10:15
10:00	10:05	10:29	10:04	10:19	10:27
10:18	10:23	10:47	10:21	10:38	10:47
10:35	10:40	11:06	10:38	10:56	11:05
10:50	10:55	11:20	10:55	11:13	11:22
<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>	11:12	11:30	11:39
11:50	11:56	12:21P	11:29	11:47	11:56
			11:44	12:02P	12:11P
			11:59	12:17	12:26
12:05P <i>Every</i>	12:11P <i>15 Minutes</i>	12:36P <i>Until</i>			
1:05	1:11	1:36	12:14P	12:32P	12:40P
1:22	1:28	1:53	<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>
1:39	1:45	2:10	1:44	2:02	2:12
1:56	2:02	2:27	2:01	2:22	2:33
2:13	2:19	2:44	2:17	2:37	2:47
2:30	2:36	3:01	2:32	2:51	3:01
2:47	2:53	3:18	2:44	3:04	3:13
3:03	3:09	3:34	<i>Every</i>	<i>14 Minutes</i>	<i>Until</i>
3:19	3:25	3:49	6:28	6:45	6:53
<i>Every</i>	<i>14 Mins.</i>	<i>or Less</i>	6:43	7:00	7:08
7:00	7:04	7:25	6:58	7:15	7:23
7:16	7:20	7:41	7:13	7:30	7:38
7:32	7:36	7:57	<i>Every</i>	<i>17 Mins.</i>	<i>or Less</i>
<i>Every</i>	<i>17 Mins.</i>	<i>or Less</i>	10:15	10:29	10:37
9:45	9:49	10:08	10:30	10:44	10:52
10:00	10:04	10:23	<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>
<i>Every</i>	<i>15 Minutes</i>	<i>Until</i>	12:00M	12:13A	12:19A
11:30	11:33	11:50	12:20A	12:33	12:39
11:50	11:53	12:10A	12:40	12:53	12:59
12:10A	12:13A	12:30	w 1:00	1:13	1:19
12:30	12:33	12:50			

Harvard Station: buses depart upper busway.

Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.25	\$2.25
CharlieTicket	\$2.00	\$2.00	\$2.75	\$4.75
Cash-on-Board	\$2.00	\$4.00	\$2.75	\$4.75
Student*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

**VALID PASSES:** LinkPass (\$84.50/mo.); Local Bus (\$55/mo.); \*Student LinkPass (\$30.00/mo.); \*\*Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and boat passes.

**FREE FARES:** Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

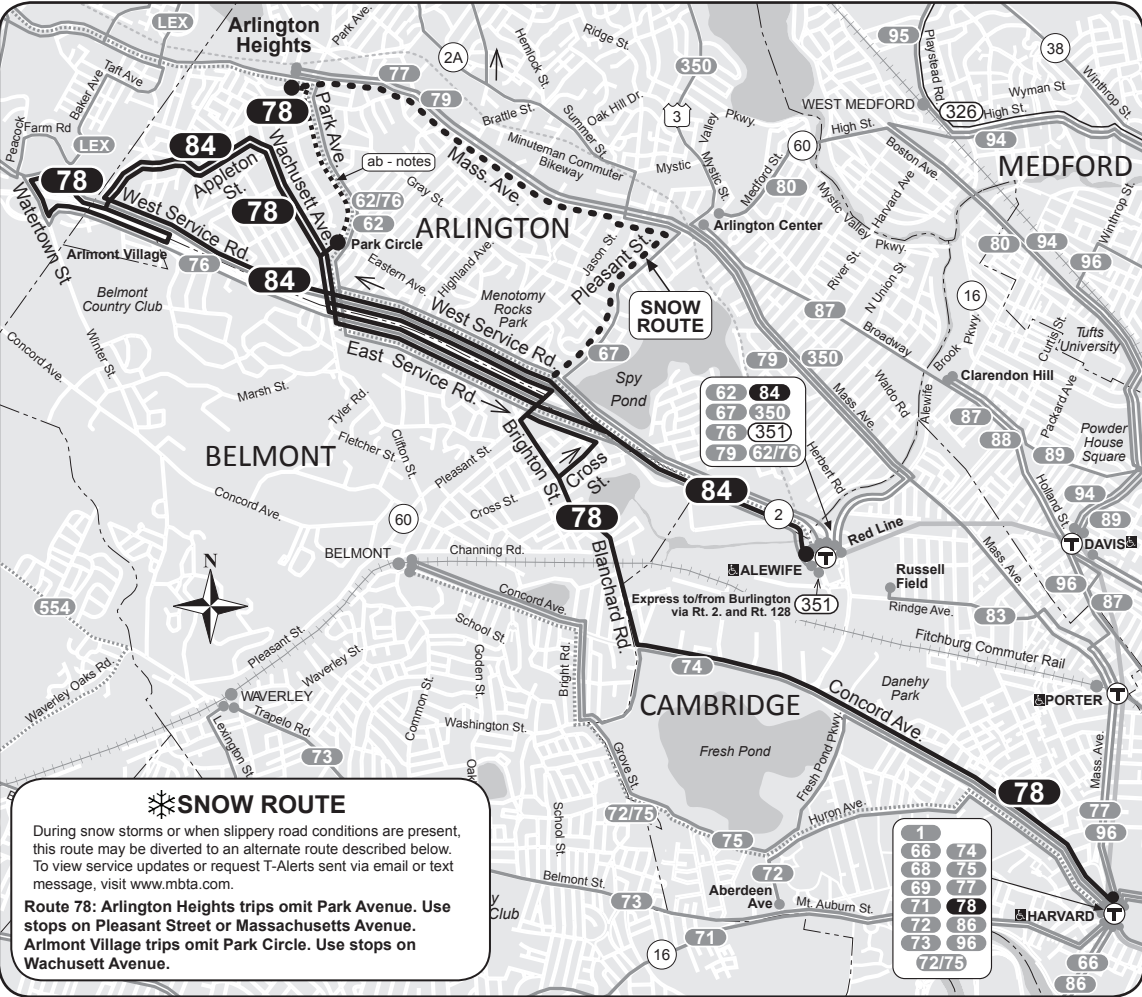
\* Requires Student CharlieCard, available to students through participating middle schools and high schools.

\*\* Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

**Fall 2016 Holidays**  
 October 10 & November 11: see Weekday  
 September 5, November 24 & December 26: see Sunday



**Route 78 Arlmont Village - Harvard Station**  
**Route 84 Arlmont Village - Alewife Station**



schedule change

# 78•84

Fall September 3, 2016 - December 30, 2016

**78 Arlmont Village-Harvard Station**  
**84 Arlmont Village-Alewife Station**

**Serving**

- Park Circle
- Arlington Heights
- Harvard University
- Eliot Street
- Red Line



**Massachusetts Bay Transportation Authority** *massDOT*  
Massachusetts Department of Transportation

Information 617-222-3200 • 1-800-392-6100  
(TTY) 617-222-5146 • [www.mbta.com](http://www.mbta.com)

78 Weekday					
Inbound			Outbound		
Leave Arlmont Village	Arrive Pleasant Street	Arrive Harvard Station	Leave Harvard Station Upper Busway	Arrive Pleasant Street	Arrive Arlmont Village
5:42A	5:50A	6:06A	5:55A	6:10A	6:22A
6:07	6:15	6:31	6:20	6:35	6:47
6:32	6:40	7:02	b 6:45	7:01	7:07
6:57	7:05	7:27	b 7:10	7:26	7:33
a 7:15	7:22	7:48	b 7:35	7:54	8:02
a 7:34	7:41	8:06	b 8:00	8:19	8:27
a 7:53	8:00	8:31	8:25	8:45	8:56
a 8:12	8:18	8:49	9:00	9:17	9:28
a 8:37	8:43	9:07	9:35	9:52	10:03
9:02	9:10	9:28	10:10	10:27	10:38
9:35	9:43	10:02	10:45	11:02	11:13
10:10	10:17	10:37	11:20	11:37	11:48
10:45	10:52	11:12	11:55	12:13P	12:26P
11:20	11:27	11:47			
11:55	12:02P	12:22P			
			12:30P	12:49P	1:02P
12:30P	12:37P	12:57P	1:05	1:24	1:37
1:05	1:12	1:32	1:40	1:59	2:12
1:40	1:47	2:07	2:15	2:34	2:47
2:15	2:22	2:42	2:50	3:09	3:22
2:50	2:57	3:18	3:25	3:42	3:55
3:25	3:33	3:54	b 4:00	4:23	4:36
4:05	4:13	4:34	b 4:25	4:48	5:01
a 4:40	4:45	5:04	b 4:50	5:13	5:26
a 5:05	5:10	5:29	b 5:15	5:38	5:51
a 5:30	5:35	5:54	b 5:40	6:03	6:16
a 5:55	6:00	6:19	b 6:05	6:28	6:41
6:11	6:17	6:33	6:30	6:47	7:00
a 6:20	6:25	6:44	6:55	7:10	7:22
6:35	6:41	6:57	7:25	7:39	7:51
a 6:45	6:50	7:09	7:55	8:09	8:21
7:10	7:16	7:33	8:30	8:44	8:56
8:05	8:11	8:26	9:30	9:44	9:56
9:05	9:11	9:26	10:30	10:44	10:56
10:05	10:11	10:26	11:30	11:44	11:56
11:05	11:11	11:26	12:30A	12:44A	12:56A
12:05A	12:11A	12:24A			
a - From Arlington Heights, does NOT serve Arlmont Village b - To Arlington Heights, does NOT serve Arlmont Village					

78 Saturday					
Inbound			Outbound		
Leave Arlmont Village	Arrive Pleasant Street	Arrive Harvard Station	Leave Harvard Station Upper Busway	Arrive Pleasant Street	Arrive Arlmont Village
7:00A	7:06A	7:23A	6:27A	6:38A	6:51A
8:00	8:06	8:23	7:27	7:38	7:51
9:00	9:06	9:23	8:27	8:38	8:51
10:00	10:06	10:23	9:30	9:41	9:54
11:00	11:06	11:23	10:30	10:41	10:54
			11:30	11:42	11:55
12:00N	12:07P	12:25P	12:30P	12:42P	12:55P
1:00	1:07	1:25	1:30	1:43	1:56
2:00	2:07	2:25	2:30	2:43	2:56
3:00	3:07	3:25	3:30	3:43	3:57
4:00	4:07	4:25	4:30	4:43	4:57
5:00	5:06	5:24	5:30	5:43	5:57
6:00	6:06	6:24	6:30	6:43	6:57
7:05	7:11	7:29	7:35	7:48	8:02
8:05	8:11	8:29	8:35	8:48	9:02
9:05	9:11	9:29	9:35	9:47	10:01
10:05	10:11	10:27	10:35	10:47	11:01
11:05	11:11	11:25	11:35	11:45	11:58
12:05A	12:11A	12:25A	12:35A	12:45A	12:58A
78 Sunday					
Leave Arlmont Village	Arrive Pleasant Street	Arrive Harvard Station	Lv/Harvard Station Upper Busway	Arrive Pleasant Street	Arrive Arlmont Village
6:40A	6:47A	7:00A	6:10A	6:21A	6:32A
7:40	7:47	8:00	7:10	7:22	7:33
8:40	8:48	9:02	8:10	8:22	8:33
9:40	9:47	10:04	9:10	9:22	9:33
10:40	10:47	11:04	10:10	10:22	10:33
11:40	11:48	12:05P	11:10	11:22	11:34
12:40P	12:48P	1:05P	12:10P	12:24P	12:35P
1:40	1:48	2:05	1:10	1:24	1:35
2:40	2:47	3:04	2:10	2:24	2:35
3:40	3:47	4:04	3:10	3:24	3:35
4:40	4:47	5:04	4:10	4:25	4:37
5:40	5:47	6:02	5:10	5:25	5:37
6:40	6:47	7:02	6:10	6:23	6:35
7:40	7:46	8:00	7:10	7:23	7:35
8:40	8:46	9:00	8:10	8:23	8:35
9:40	9:47	10:00	9:10	9:23	9:35
10:40	10:47	11:00	10:10	10:23	10:35
11:40	11:47	12:00M	11:10	11:23	11:34
12:40A	12:46A	12:57A	12:10A	12:22A	12:34A
Harvard Station: buses depart from the upper busway.					





84 Weekday					
Inbound			Outbound		
Leave Arlmont Village	Arrive Pleasant Street	Arrive Alewife Station	Leave Alewife Station	Arrive Pleasant Street	Arrive Arlmont Village
6:44A	6:53A	6:57A	7:04A	7:08A	7:12A
7:14	7:24	7:31	7:34	7:38	7:42
7:44	7:54	8:01	8:04	8:08	8:12
8:14	8:24	8:31	8:34	8:37	8:41
8:44	8:54	9:00			
4:10P	4:16P	4:21P	3:58P	4:02P	4:08P
4:46	4:53	4:59	4:33	4:37	4:43
5:20	5:27	5:33	5:07	5:11	5:17
5:37	5:45	5:51	5:24	5:28	5:35
5:54	6:03	6:07	5:41	5:45	5:52
6:47	6:55	6:58	5:58	6:02	6:09
			6:20	6:24	6:31
			6:35	6:39	6:46

No Route 84 service on weekends.

NOTE: Buses arrive at Park Circle approximately 4 minutes after leaving Arlmont Village

## Route 78 & 84 Arlmont Village-Harvard Station or Alewife Station

 All buses are accessible to persons with disabilities

				
Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.25	\$2.25
CharlieTicket	\$2.00	\$2.00	\$2.75	\$4.75
Cash-on-Board	\$2.00	\$4.00	\$2.75	\$4.75
Student*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$84.50/mo.); Local Bus (\$55/mo.); \*Student LinkPass (\$30.00/mo.); \*\*Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and boat passes.  
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.  
\* Requires Student CharlieCard, available to students through participating middle schools and high schools.  
\*\* Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2016 Holidays  
October 10 & November 11: see Weekday  
September 5, November 24 & December 26: see Sunday



## Appendix C: Crash Rate Worksheets

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## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Arlington COUNT DATE : 10-5/2016 - 10/6/2016

DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

### ~ INTERSECTION DATA ~

MAJOR STREET : Park Avenue/ Park Avenue Extension

MINOR STREET(S) : Westminster Avenue

Lowell Street

Bow Street

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



### PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	6	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NEB	NWB	SEB	SWB	
PEAK HOURLY VOLUMES (AM/PM) :	272	83	730	156	36	265	1,542

" K " FACTOR :

**0.081**

INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME :

**19,037**

TOTAL # OF CRASHES :

**7**

# OF YEARS :

**3**

AVERAGE # OF CRASHES PER YEAR ( **A** ) :

**2.33**

**CRASH RATE CALCULATION :**

**0.34**

RATE = (  $A * 1,000,000$  ) / (  $V * 365$  )

Comments : \_\_\_\_\_

Project Title & Date: \_\_\_\_\_





## Appendix D: Trip Generation Calculations

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## Trip Generation Summary

Alternative: Proposed

Phase:

Project: 28346.00

Open Date: 10/21/2016

Analysis Date: 10/21/2016

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
220	38 Units		177	177	354		4	18	22		25	14	39
	38 Dwelling Units												
220	9 Units		89	89	178		2	6	8		15	8	23
	9 Dwelling Units												
Unadjusted Volume			266	266	532		6	24	30		40	22	62
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			266	266	532		6	24	30		40	22	62

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

\* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

**TRIP GENERATION 2014, TRAFFICWARE, LLC**

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## Trip Generation Summary

Alternative: Existing

Phase:

Project: 28346.00

Open Date: 10/21/2016

Analysis Date: 10/21/2016

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
565	DAYCARE 1		139	139	278		28	24	52		25	28	53
	65 Students												
Unadjusted Volume			139	139	278		28	24	52		25	28	53
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			139	139	278		28	24	52		25	28	53

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

\* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

**TRIP GENERATION 2014, TRAFFICWARE, LLC**

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## **Appendix E: Census Data**

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K200801

MEANS OF TRANSPORTATION TO WORK  
Universe: Workers 16 years and over  
2015 American Community Survey 1-Year Supplemental Estimates with a Population Threshold of 20,000 or More

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

**Tell us what you think.** Provide feedback to help make American Community Survey data more useful for you.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

	Arlington CDP, Massachusetts	
	Estimate	Margin of Error
Total:	23,127	+/-1,666
Car, truck, or van - drove alone	13,173	+/-1,874
Car, truck, or van - carpooled	1,734	+/-614
Public transportation (excluding taxicab)	5,015	+/-1,405
Taxicab, motorcycle, bicycle, walked, or other means	1,472	+/-548
Worked at home	1,733	+/-653

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2015 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '\*\*\*' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '\*\*\*\*' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '\*\*\*\*\*' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.



## **Appendix F: Capacity Analysis Worksheets**

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## 2016 Existing Conditions



# LANE SUMMARY



Site: Existing AM

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Park Avenue													
Lane 1	410	2.0	1805	0.227	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	410	2.0		0.227		0.0	NA	0.0	0.0				
East: Lowell Street													
Lane 1	92	2.0	355	0.260	100	18.7	LOS C	1.0	25.7	Full	1600	0.0	0.0
Approach	92	2.0		0.260		18.7	LOS C	1.0	25.7				
NorthEast: Bow Street													
Lane 1	184	0.0	170	1.083	100	148.5	LOS F	13.8	344.5	Full	1600	0.0	0.0
Approach	184	0.0		1.083		148.5	LOS F	13.8	344.5				
North: Park Avenue Extension													
Lane 1	452	1.0	737	0.613	100	17.3	LOS C	5.9	149.5	Full	1600	0.0	0.0
Approach	452	1.0		0.613		17.3	LOS C	5.9	149.5				
NorthWest: Westminster Avenue													
Lane 1	163	1.0	303	0.539	100	30.0	LOS D	3.0	74.6	Full	1600	0.0	0.0
Approach	163	1.0		0.539		30.0	LOS D	3.0	74.6				
West: Lowell Street													
Lane 1	418	3.0	571	0.733	100	26.7	LOS D	8.4	215.7	Full	1600	0.0	0.0
Approach	418	3.0		0.733		26.7	LOS D	8.4	215.7				
Intersection	1720	1.7		1.083		30.8	NA	13.8	344.5				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE SUMMARY

 **Site: Existing PM**

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Park Avenue													
Lane 1	793	0.0	1851	0.429	100	0.1	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	793	0.0		0.429		0.1	NA	0.0	0.0				
East: Lowell Street													
Lane 1	170	2.0	328	0.517	100	27.2	LOS D	2.8	71.3	Full	1600	0.0	0.0
Approach	170	2.0		0.517		27.2	LOS D	2.8	71.3				
NorthEast: Bow Street													
Lane 1	90	0.0	181	0.499	100	43.3	LOS E	2.3	57.3	Full	1600	0.0	0.0
Approach	90	0.0		0.499		43.3	LOS E	2.3	57.3				
North: Park Avenue Extension													
Lane 1	288	0.0	683	0.422	100	14.1	LOS B	2.5	62.6	Full	1600	0.0	0.0
Approach	288	0.0		0.422		14.1	LOS B	2.5	62.6				
NorthWest: Westminster Avenue													
Lane 1	40	0.0	337	0.119	100	17.1	LOS C	0.5	11.3	Full	1600	0.0	0.0
Approach	40	0.0		0.119		17.1	LOS C	0.5	11.3				
West: Lowell Street													
Lane 1	296	2.0	559	0.529	100	18.5	LOS C	3.9	99.9	Full	1600	0.0	0.0
Approach	296	2.0		0.529		18.5	LOS C	3.9	99.9				
Intersection	1677	0.6		0.529		11.2	NA	3.9	99.9				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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## 2021 No Build Conditions



# LANE SUMMARY

 **Site: No Build AM**

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Park Avenue													
Lane 1	434	2.0	1805	0.240	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	434	2.0		0.240		0.0	NA	0.0	0.0				
East: Lowell Street													
Lane 1	100	2.0	327	0.306	100	20.8	LOS C	1.3	31.8	Full	1600	0.0	0.0
Approach	100	2.0		0.306		20.8	LOS C	1.3	31.8				
NorthEast: Bow Street													
Lane 1	197	0.0	153	1.288	100	226.8	LOS F	21.8	545.0	Full	1600	0.0	0.0
Approach	197	0.0		1.288		226.8	LOS F	21.8	545.0				
North: Park Avenue Extension													
Lane 1	478	1.0	725	0.660	100	19.1	LOS C	7.1	179.4	Full	1600	0.0	0.0
Approach	478	1.0		0.660		19.1	LOS C	7.1	179.4				
NorthWest: Westminster Avenue													
Lane 1	175	1.0	283	0.619	100	36.4	LOS E	3.6	91.6	Full	1600	0.0	0.0
Approach	175	1.0		0.619		36.4	LOS E	3.6	91.6				
West: Lowell Street													
Lane 1	442	3.0	549	0.806	100	33.4	LOS D	10.8	277.5	Full	1600	0.0	0.0
Approach	442	3.0		0.806		33.4	LOS D	10.8	277.5				
Intersection	1826	1.7		1.288		42.1	NA	21.8	545.0				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE SUMMARY

 **Site: No Build PM**

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Park Avenue													
Lane 1	836	0.0	1850	0.452	100	0.1	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	836	0.0		0.452		0.1	NA	0.0	0.0				
East: Lowell Street													
Lane 1	180	2.0	305	0.591	100	32.5	LOS D	3.4	87.3	Full	1600	0.0	0.0
Approach	180	2.0		0.591		32.5	LOS D	3.4	87.3				
NorthEast: Bow Street													
Lane 1	99	0.0	164	0.602	100	55.5	LOS F	2.9	73.4	Full	1600	0.0	0.0
Approach	99	0.0		0.602		55.5	LOS F	2.9	73.4				
North: Park Avenue Extension													
Lane 1	307	0.0	666	0.460	100	14.9	LOS B	3.0	74.3	Full	1600	0.0	0.0
Approach	307	0.0		0.460		14.9	LOS B	3.0	74.3				
NorthWest: Westminster Avenue													
Lane 1	46	0.0	313	0.146	100	18.5	LOS C	0.5	13.7	Full	1600	0.0	0.0
Approach	46	0.0		0.146		18.5	LOS C	0.5	13.7				
West: Lowell Street													
Lane 1	314	2.0	532	0.591	100	21.1	LOS C	4.8	122.6	Full	1600	0.0	0.0
Approach	314	2.0		0.591		21.1	LOS C	4.8	122.6				
Intersection	1782	0.6		0.602		13.2	NA	4.8	122.6				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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## 2021 Build Conditions



# LANE SUMMARY



Site: Build AM

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Park Avenue													
Lane 1	436	2.0	1805	0.242	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	436	2.0		0.242		0.0	NA	0.0	0.0				
East: Lowell Street													
Lane 1	100	2.0	325	0.308	100	20.9	LOS C	1.3	32.1	Full	1600	0.0	0.0
Approach	100	2.0		0.308		20.9	LOS C	1.3	32.1				
NorthEast: Bow Street													
Lane 1	197	0.0	150	1.311	100	237.2	LOS F	22.6	564.8	Full	1600	0.0	0.0
Approach	197	0.0		1.311		237.2	LOS F	22.6	564.8				
North: Park Avenue Extension													
Lane 1	478	1.0	722	0.662	100	19.2	LOS C	7.2	180.6	Full	1600	0.0	0.0
Approach	478	1.0		0.662		19.2	LOS C	7.2	180.6				
NorthWest: Westminster Avenue													
Lane 1	175	1.0	279	0.626	100	37.3	LOS E	3.7	93.0	Full	1600	0.0	0.0
Approach	175	1.0		0.626		37.3	LOS E	3.7	93.0				
West: Lowell Street													
Lane 1	454	3.0	544	0.835	100	36.7	LOS E	12.2	311.8	Full	1600	0.0	0.0
Approach	454	3.0		0.835		36.7	LOS E	12.2	311.8				
Intersection	1840	1.7		1.311		44.1	NA	22.6	564.8				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE SUMMARY



Site: Driveway AM

New Site

Stop (Two-Way)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Driveway													
Lane 1	15	0.0	552	0.028	100	11.7	LOS B	0.1	2.6	Full	1600	0.0	0.0
Approach	15	0.0		0.028		11.7	LOS B	0.1	2.6				
East: Lowell Street													
Lane 1	210	2.0	1850	0.113	100	2.8	LOS A	0.0	0.6	Full	1600	0.0	0.0
Approach	210	2.0		0.113		2.8	NA	0.0	0.6				
West: Lowell Street													
Lane 1	441	2.0	1862	0.237	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	441	2.0		0.237		0.0	NA	0.0	0.0				
Intersection	666	1.9		0.237		1.2	NA	0.1	2.6				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE SUMMARY



Site: Build PM

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Park Avenue													
Lane 1	846	0.0	1850	0.457	100	0.1	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	846	0.0		0.457		0.1	NA	0.0	0.0				
East: Lowell Street													
Lane 1	182	2.0	301	0.603	100	33.6	LOS D	3.5	89.9	Full	1600	0.0	0.0
Approach	182	2.0		0.603		33.6	LOS D	3.5	89.9				
NorthEast: Bow Street													
Lane 1	102	0.0	162	0.631	100	59.1	LOS F	3.1	78.7	Full	1600	0.0	0.0
Approach	102	0.0		0.631		59.1	LOS F	3.1	78.7				
North: Park Avenue Extension													
Lane 1	308	0.0	658	0.468	100	15.2	LOS C	3.1	76.3	Full	1600	0.0	0.0
Approach	308	0.0		0.468		15.2	LOS C	3.1	76.3				
NorthWest: Westminster Avenue													
Lane 1	46	0.0	307	0.149	100	18.7	LOS C	0.6	13.9	Full	1600	0.0	0.0
Approach	46	0.0		0.149		18.7	LOS C	0.6	13.9				
West: Lowell Street													
Lane 1	324	2.0	520	0.622	100	22.6	LOS C	5.4	136.8	Full	1600	0.0	0.0
Approach	324	2.0		0.622		22.6	LOS C	5.4	136.8				
Intersection	1807	0.6		0.631		13.9	NA	5.4	136.8				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# LANE SUMMARY



Site: Driveway PM

New Site  
Stop (Two-Way)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Driveway													
Lane 1	12	0.0	633	0.019	100	10.8	LOS B	0.1	1.8	Full	1600	0.0	0.0
Approach	12	0.0		0.019		10.8	LOS B	0.1	1.8				
East: Lowell Street													
Lane 1	287	1.9	1817	0.158	100	3.1	LOS A	0.1	3.2	Full	1600	0.0	0.0
Approach	287	1.9		0.158		3.1	NA	0.1	3.2				
West: Lowell Street													
Lane 1	315	2.0	1859	0.170	100	0.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	315	2.0		0.170		0.0	NA	0.0	0.0				
Intersection	614	1.9		0.170		1.7	NA	0.1	3.2				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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